UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, Ca. 94105-3901

AUG 27 1993

SUBJECT: Issuance of Special Ocean Dumping Permits for StarKist Samoa, Inc. (OD 93-01) and VCS Samoa Packing Company, Inc. (OD 93-02)

Dear Interested Party:

The U.S. Environmental Protection Agency (EPA) Region IX is issuing the enclosed special ocean dumping permits to StarKist Samoa, Inc. (OD 93-01) and VCS Samoa Packing Company, Inc. (OD 93-02) under §102 of the Marine Protection, Research and Sanctuaries Act (MPRSA). The effective date for the permits is September 1, 1993. These permits authorize disposal of fish processing wastes off American Samoa for a three year period.

During the 30-day comment period on drafts of the MPRSA §102 permits, EPA Region IX only received comments from StarKist Seafoods and Van Camp Seafoods. Responses to these comments are enclosed with this notice. After carefully reviewing the comments submitted by the canneries and coordinating responses with the American Samoa EPA, EPA Region IX determined that the MPRSA §102 ocean dumping permits should be issued to both canneries.

Information gathered during the term of the new permits will be used to continue EPA Region IX's management of the fish processing waste disposal program off American Samoa. If at any time EPA Region IX determines that violations of either permit occur or disposal operations do not meet the ocean dumping regulations at 40 C.F.R. Parts 220 through 228, we will reconsider our authorization for use of the designated site.

If you have any questions regarding the ocean dumping permits, please contact Brian Ross at (415) 744-1979 or Patricia Young at (415) 744-1594.

Sincerely,

Clarence Tenley, Acting Chief
Wetlands, Oceans and Estuaries Branch

Enclosures (3)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, Ca. 94105-3901

COMMUNICATION STRATEGY

Action: Issuance of Marine Protection, Research and Sanctuaries Act Section 102 permits for StarKist Samoa and VCS Samoa Packing in American Samoa.

Projected Announcement: Wednesday September 1, 1993

Location: American Samoa

Background: EPA Region IX has revised draft Marine Protection, Research and Sanctuaries Act (MPRSA) Section 102 permits for StarKist Samoa and VCS Samoa Packing. We are prepared to issue the special permits for a three-year period to allow the canneries to continue disposing of fish processing wastes off American Samoa at an ocean disposal site designated by EPA Region IX in February 1990. The special permits will be effective from September 1, 1993 through August 31, 1996. Special conditions in the permits include: 1) waste stream limits, 2) monthly waste stream analyses and reports, 3) confirmatory bioassays and plume model analyses, 4) use of a computerized navigation system aboard a new disposal vessel, 5) disposal site monitoring and 6) monthly and quarterly reporting forms. The canneries have been disposing of fish processing wastes off American Samoa since 1979 without any significant adverse environmental effects.

Press Release Information

1. Public Notices for draft permits were published in the *American Samoa News* on June 8, 1993 and in the *San Francisco Chronicle* on June 11, 1993.

2. Comments were received from VCS Samoa Packing (June 22, 1993) and StarKist Seafoods (June 30 and July 28, 1993).

3. Due to late comments from StarKist Seafoods and EPA Region IX's analysis of StarKist's new information, we administratively extended both ocean dumping permits (OD 90-01 and OD 90-02) until September 1, 1993.

3. Waste stream limits and ocean disposal site loadings were reduced for most parameters because the wastes have been characterized better by the canneries.

4. Confirmatory bioassays and new plume modeling work are still required because the waste streams are different than previous reports, different volumes of fish processing waste are being generated at the StarKist Samoa plant, and a new disposal vessel, named the FV TASMAN SEA, will be used to dispose of the wastes at the designated ocean disposal site.

5. A computerized navigation system is required to provide more accurate prints of the disposal vessel tracks and better reporting forms have been prepared to provide data to EPA Region IX every three months instead of every six months.

Public Interest: Low

Staff Contact: Brian Ross (W-7-3) 4-1979, or Patricia Young (E-4) 4-1594
Division Dir.: Harry Seraydarian (W-1)
Attorney: None
Press Officer: Lois Grunwald (E-2), 4-1588/
Bill Glenn, 4-1589

EPA REGION IX COMMUNICATION STRATEGY

Action: Issuance of Final Marine Protection, Research and Sanctuaries Act Section 102 permits for StarKist Samoa and VCS Samoa Packing in American Samoa.

Projected Announcement: Wednesday September 1, 1993

Materials to be Prepared	**By Whom:**
A: Press Release	Lois Grunwald
B: Final MPRSA Section 102 Permits	Patrick Cotter/Patricia Young
C: Response to Comments	Patrick Cotter/Patricia Young

Note: **Press Release at day** ~~0~~ +3 **(September 1)** ~~**when Harry Seraydarian signs**~~ **the final permits** after are sent out at 0.

AUDIENCE	DAY	EPA STAFF	METHOD	MATERIALS
Responsible Parties				
StarKist Foods	0	Young/Ross	Phone/Mail	B,C
Van Camp Seafood	"	"	"	"
StarKist Samoa	"	Young/Ross	Ph./Ex.Mail	"
VCS Samoa Packing	"	"	"	"
Media				
American Samoa	+3 ~~0~~	Grunwald	PR News	A
Hawaii	"	"	"	"
Federal Elected Officials				
NA				
American Samoa Elected Officials				
NA				
Federal Agencies				
USCG Liaison Office, AS	0	Young/Ross	Express Mail	B,C
USCG District, HI	"	"	Mail	"
DOI Territorial & Int. Affairs	"	"	"	"
NOAA Sanctuaries & Reserves	"	"	"	"
COE Honolulu District	"	"	"	"
USFWS HI	"	"	"	"
NOAA NMFS HI	"	"	"	"
FDA SSB	"	"	"	"
American Samoa Agencies				
Togipa Tasuga ASEPA	0	Young/Ross	Express Mail	B,C
Lelei Peau, ASCMP	"	"	"	"
Ray Tulafona, ASMWR	"	"	"	"
Alfonso Galea'i, ASEDP	"	"	"	"
Malaestasi Togufau, ASAG	"	"	"	"
Local Elected Officials				
None				
Public Affairs				
None				

AUDIENCE	DAY	EPA STAFF	METHOD	MATERIALS
Public Interest Groups See mailing list	0	Young/Ross	Mail	B,C
EPA Offices Oceans and Coastal Protection Division Regional Ocean Dumping Coordinators, Regions I, II, III, IV, VI and X PICO, Hawaii	0 " "	Ross " "	Mail " "	B,C " "
Other Persons to be Notified None				

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, Ca. 94105-3901

AUG 27 1993

MEMORANDUM

SUBJECT: Issuance of Special Ocean Dumping Permits to StarKist Samoa (OD 93-01) and VCS Samoa Packing Company (OD 93-02)

FROM: Clarence Tenley, Acting Chief
Wetlands, Oceans and Estuaries Branch (W-7)

TO: John Lishman, Chief
Marine Pollution Control Branch
Oceans and Coastal Protection Division (WH-556F)

Region IX has issued the attached special MPRSA §102 ocean dumping permits to StarKist Samoa (OD 93-01) and VCS Samoa Packing (OD 93-02) to dispose of fish processing wastes off American Samoa. The effective date of the permits is September 1, 1993.

During the 30-day comment period on the draft permits, EPA Region IX only received comments from VCS Samoa Packing and StarKist Seafoods. Responses to comments on the comment letters are attached. After carefully reviewing the comments submitted by the canneries and coordinating responses with the American Samoa EPA, EPA Region IX has determined that MPRSA §102 permits should be issued to VCS Samoa Packing and StarKist Samoa.

Information gathered during the term of the new special permits will be used to continue EPA Region IX's management of the fish processing waste disposal program off American Samoa. If at any time EPA Region IX determines that the permittees violate their permit or their disposal operations do not meet the ocean dumping regulations at 40 C.F.R. Parts 220 through 228, we will reconsider our authorization for use of the designated site.

If you have any questions regarding the ocean dumping permits, please contact Brian Ross at (415) 744-1979 or Patricia Young at (415) 744-1594.

Attachments (3)

cc: David Redford, OCPD
Regional Ocean Dumping Coordinators, Regions I, II, III, IV, VI and X

RESPONSE TO COMMENTS ON OCEAN DUMPING PERMITS FOR AMERICAN SAMOA FISH CANNERIES

Responses to Comments from Van Camp Seafood Company for VCS Samoa Packing (June 22, 1993)

VCS Samoa Comment 1. VCS Samoa Packing requested that the bioassays and computer modeling required in Special Condition 3.3.5 be deleted because the waste streams are the same as the waste streams in 1987 and the those evaluated in a computer model in 1990.

EPA Region IX Response. In 1987, the only waste being disposed at the ocean disposal site was DAF Sludge. This was the only waste used in the bioassay tests because the other wastes, Precooker Water and Press Water, were being discharged through the outfall in Pago Pago Harbor. Bioassays were not required for Special Ocean Dumping Permit OD 90-02 because EPA Region IX relied on data from previous research ocean dumping permits for the waste characterizations. In addition, recent data on the characteristics of the three waste streams now authorized for disposal at the ocean disposal site shows significant changes in each waste compared to conditions before OD 90-02 was issued.

EPA Region IX considered the following points before requiring bioassays: 1) changes in the characteristics of each waste stream, 2) the way that wastes are combined, and 3) disposal of combined wastes from the ocean disposal vessel. EPA Region IX decided that the suspended particulate phase bioassays should be conducted using samples taken from the permittees' onshore storage tanks, not the individual waste streams generated at the permittees' plants.

We determined that replicate suspended particulate phase bioassays should be conducted at least three separate times during the first year of the new permits. Special Condition 3.3.5 has been rewritten to require samples of the onshore storage tanks to be taken on November 30, 1993, February 28, 1994 and May 31, 1994 to cover any potential seasonal changes in fish processing waste characteristics.

When new bioassays are conducted, the LC_{50}, the release zone, the mixing zone and the limiting permissible concentration (LPC) of the fish processing wastes discharged at the disposal site may change. This necessitates a reevaluation of the disposal site model to ensure that the LPC is not exceeded within the disposal site 4 hours after disposal or anytime outside the disposal site boundary. Reevaluation of the plume model should be conducted using the results of VCS Samoa Packing's suspended particulate phase bioassays alone, StarKist Samoa's suspended particulate phase bioassays alone, and a plume model combining waste from both canneries. Analysis of the three situations is necessary to evaluate a disposal vessel load consisting of VCS Samoa Packing wastes only, StarKist Samoa wastes only or a combination of wastes from both canneries. The model evaluation should be similar to the one presented to EPA Region IX in March 1990.

EPA Region IX has revised Special Condition 3.3 to require chemical analysis of samples from the canneries' onshore storage tanks twice each month for one year. These

results will provide a better characterization of the wastes actually disposed at the ocean disposal site. These data may be used in future permitting actions to reduce the number of chemical analyses performed on the canneries' waste streams.

VCS Samoa Packing Comment 2. The new limits may not represent the actual waste stream concentrations. The new limits may result in VCS Samoa Packing exceeding their permit limits. Of particular concern were the ammonia and oil and grease limits for Precooker Water.

EPA Region IX Response. According to EPA's Guidance Document for Ocean Dumping Permit Writers (January 30, 1988):

Although using the maximum reported concentration for the waste constituent [as a permit limit] *may be acceptable, it is not recommended because the maximum reported concentration may be an outlier* [defined as a waste concentrations that is plus or minus three standard deviations from the mean waste concentration], *a value outside the normally expected values. Because it is impossible to determine whether the maximum reported value is an outlier without further analysis, it is better to base concentration limits on statistical estimates of variation in waste concentrations.*

Limits set on statistical measures of variations in waste concentrations allow the Agency [EPA] *to determine the significance of concentrations in monitoring reports that exceed the set limit. If the permit limit is set on the 95th percentile* [as limits for VCS Samoa Packing and StarKist Samoa are set], *for example, 5 measures out of 100 would exceed the permit solely by chance...*(page 3-3).

For the reasons discussed above, EPA Region IX calculated the outliers for each waste concentration and removed them from the permit limit calculations for both canneries. Knowing the variable nature of fish processing wastes, EPA Region IX selected the 95th percentile because we do not expect all reported concentrations to fall within the limits listed in the permit. EPA Region IX has enforcement discretion when evaluating permit monitoring results from both canneries. Therefore, we have determined that the waste limits for VCS Samoa Packing should remain as they are listed in the permit.

VCS Samoa Packing Comment 3. The pH limit for Precooker Water and Press Water should be changed to 7.0 pH units to protect equipment.

EPA Region IX Response. EPA Region IX agrees with VCS Samoa Packing's request. The limit for the pH range for all three fish processing wastes has been changed to 7.0 in Table 3 of Special Condition 2.3. This change will also be incorporated into Table 3 of Special Condition 2.3 in the StarKist Samoa permit.

Responses to Comments from StarKist Seafoods Inc. for StarKist Samoa (June 30, 1993)

StarKist Samoa Comment 1. Each cannery should be held liable only for its own fish processing wastes during disposal operations when both canneries' wastes are being transported and disposed at the ocean site.

EPA Region IX Response. Each cannery is liable for its own fish processing waste stream limits as defined in its permit. When fish processing wastes from both canneries are pumped into the ocean disposal vessel for transportation to the ocean disposal site, both canneries and the waste transporter are liable for violations of the ocean dumping permits, though the wastes are maintained in separate holding tanks.

As the FV TASMAN SEA is designed now, wastes from both canneries are placed in separate holding tanks and discharged to the ocean through a common pipe and discharge port. If the wastes were discharged simultaneously through the same port or through separate ports, it would be difficult to assign separate liability for any detected violations in the receiving water. The present disposal procedure, was well as other possible disposal configurations for the disposal vessel, requires that both canneries be held individually liable for violations of the ocean dumping permits. Therefore, General Condition 1.2 will not be changed. However, if waste from only one cannery is placed onboard the disposal vessel and disposed at the ocean site, the cannery generating the waste will be solely responsible for any permit violations.

StarKist Samoa Comment 2. Revise the volumes of fish processing wastes generated at their plant as follows:

Fish Processing Wastes Generated	Application Volume (gallons/day)	Revised Volume (gallons/day)	Change (gallons/day)
DAF Sludge	60,000	30,000	-30,000
Cooker Juice	100,000	70,000	-30,000
Press Liquor	40,000	100,000	+60,000
Total Generated	200,000	200,000	0

Revisions are needed to reflect the volumes of waste generated at StarKist Samoa's plant now. According to calculations by StarKist (July 28, 1993), changes in the volume of StarKist Samoa's waste will not have a significant effect on the loading of wastes at the disposal site.

EPA Region IX Response. The proposed increase in the volume of Press Liquor generated at StarKist Samoa's plant required an evaluation of the loading of fish processing wastes disposed at the ocean site. The three tables enclosed with these responses (Evaluation of Fish Cannery Loadings at the American Samoa Ocean Disposal Site, August 1993) document EPA

Region IX's analysis of StarKist Samoa's proposed changes in the volumes of fish processing wastes generated at their plant.

The concentrations of regulated parameters in the canneries' waste streams have changed substantially since the 1990 ocean dumping permits were issued (see the last two rows on page 2 of the table). If the ocean dumping permits were issued as requested in the canneries' December 8, 1992 applications, loadings at the ocean disposal site would decrease by 22-36% for 8 parameters, and the ammonia loading would decrease by 87%. Granting StarKist Samoa's requested volume changes would reduce the loading of 8 parameters by 12-29%, and ammonia loading would still decrease by 87% (see the last 2 rows on page 3 of the table). Considering the reductions in fish processing waste loading at the ocean disposal site, EPA Region IX will change the permitted volumes of waste generated at StarKist Samoa's plant to: 30,000 gallons/day for DAF Sludge, 70,000 gallons/day for Cooker Juice, and 100,000 gallons/day for Press Liquor (see Special Condition 2.3).

StarKist Samoa Comments 3 and 4. StarKist Samoa requested that they report the actual volume of combined wastes disposed daily at the ocean disposal site, in place of monitoring the volume of each waste stream generated daily. The three waste streams are combined in an onshore storage tank. The composite mixture should be analyzed monthly instead of the monthly analysis of each waste stream onshore. The composite mixture would provide a better representation of the characteristics of the wastes being disposed at the ocean site.

EPA Region IX Response. EPA Region IX agrees that analysis of the three waste streams combined in the onshore storage tank would provide a better characterization of wastes disposed at the ocean site. Continued reporting or the amount of each waste stream generated daily is important to document: a) the volumes of fish processing wastes generated at the plant, and b) the nature of the waste pumped into the onshore storage tanks for eventual ocean disposal. Report Form 1 in Appendix B has been revised to clarify reporting requirements for the daily volumes of fish processing waste generated at the permittee's plant and the daily volume of fish processing wastes disposed at the ocean site.

To obtain data more frequently, EPA Region IX changed the summary report period from 6 months to 3 months (see Special Condition 3.3.2). Consequently, Report Form 2 in Appendix B has been changed to reflect the 3-month reporting period and to allow reporting of the cumulative, monthly, waste volumes for each calendar year.

The new ocean dumping permits will also require the canneries to analyze samples of the fish processing wastes streams combined in the onshore storage tanks before the wastes are loaded into the disposal vessel (see Special Condition 3.3). Once sufficient data are obtained, EPA Region IX will consider deleting the requirements for monthly analysis of the three individual waste streams for each cannery. New limits for the composite wastes cannot be calculated now because data have not been obtained to support new limits.

StarKist Samoa Comment 5. StarKist Samoa requested that bioassays of fish processing wastes and a reevaluation of the disposal site model be deleted from the permit because characteristics of the waste streams have remained essentially the same. If bioassays are still

required, they requested that the site modeling report be deferred until 18 months after the effective date of the permit.

EPA Region IX Response. See EPA Region IX's response to VCS Samoa Packing's Comment 1. EPA Region IX agrees with StarKist's request for a longer time to prepare the model reevaluation report. Therefore, the submittal date for the report discussing new bioassays and the disposal plume reevaluation has been changed from 1 year to 18 months in both permits (see Special Condition 3.3.5).

StarKist Samoa Comment 6. StarKist Samoa requested that the requirement for computer modeling be deleted from Special Condition 3.3.5 because the dimensions of the FV TASMAN SEA fall within the range of vessels evaluated in the March 1990 modeling study.

EPA Region IX Response. See EPA Region IX's response to VCS Samoa Packing's Comment 1. The dimensions of the new disposal vessel are not the most important reasons for reevaluating the disposal plume model.

Evaluation of Fish Cannery Loadings at the American Samoa Ocean Disposal Site

August 1993

1990 Permit# & Waste[1]	Volume[2] gal/day	TS[3] mg/L	TS[4] lb/day	TVS mg/L	TVS lb/day	BOD mg/L	BOD lb/day	O&G mg/L	O&G lb/day	TP mg/L	TP lb/day	TN mg/L	TN lb/day	NH3 mg/L	NH3 lb/day
OD 90-01 DAF Sludge	60000	230460	114990	182210	190916	376520	187868	129590	64660	3050	1522	18100	9031	7500	3742
OD 90-01 Precooker Water	100000	158290	131634	146900	122162	365450	303908	4830	4017	1150	956	21380	17780	21200	17630
OD 90-01 Press Water	40000	271920	90451	385630	128276	399090	132753	62150	20674	1990	662	31550	10495	21170	7042
StarKist Daily Loading	200000		337076		341354		624530		89350		3140		37306		28414
OD 90-02 DAF Sludge	60000	492000	245488	308700	154029	443840	221458	282750	141081	3910	1951	14950	7459	2570	1282
OD 90-02 Cooker Water	100000	257290	213962	358180	297862	60220	50079	207830	172831	2170	1805	20820	17314	2740	2279
OD 90-02 Press Water	40000	463780	154272	384560	127920	524270	174393	386480	128559	6860	2282	32020	10651	4940	1643
VCS Samoa Daily Loading	200000		613722		579811		445931		442471		6037		35424		5204
Total Daily Loading	400000		950798		921165		1070460		531822		9178		72730		33618
% StarKist Load Contribution	50		35		37		58		17		34		51		85
% VCS Samoa Load Contribution	50		65		63		42		83		66		49		15

[1] Permits issued on July 31, 1990

[2] Volumes requested in the canneries' 1990 permit applications.

[3] OD 90-01 and OD 90-02 permit limits calculated by EPA Region IX based on historical data.

[4] Loading at the ocean disposal site calculated as follows:

Waste Stream Concentration (mg/L) x 3.875 (L/gallon) x 2.2046 (lbs/kg) x 1/1,000,000 (kg/mg) x Volume Generated (gallons/day) = Loading (lbs/day)

Evaluation of Fish Cannery Loadings at the American Samoa Ocean Disposal Site

August 1993

1993 Permit App.# & Waste[5]	Volume[6] gal/day	TS[7] mg/L	TS[4] lb/day	TVS mg/L	TVS lb/day	BOD mg/L	BOD lb/day	O&G mg/L	O&G lb/day	TP mg/L	TP lb/day	TN mg/L	TN lb/day	NH3 mg/L	NH3 lb/day
Original OD 93-01 DAF Sludge	60000	163430	81545	136180	67948	232320	115918	64100	31983	1640	818	7020	3503	1830	913
Original OD 93-01 Cooker Juice	100000	114180	94952	63400	52723	185150	153971	11810	9821	940	782	7560	6287	690	574
Original OD 93-01 Press Liquor	40000	327870	109063	292280	97224	310790	103381	112080	37282	3160	1051	20360	6773	1390	462
Original StarKist Daily Loading	200000		285560		217896		373270		79087		2651		16562		1949
Original OD 93-02 DAF Sludge	60000	461790	230415	455560	227306	349350	174312	395700	197438	3790	1891	21820	10887	3470	1731
Original OD 93-02 Precooker Water	100000	115180	95784	84450	70229	64650	53763	11180	9297	1850	1538	12830	10669	410	341
Original OD 93-02 Press Water	40000	381510	126905	409310	136153	365550	121597	165860	55172	2950	981	35100	11676	830	276
Original VCS Samoa Daily Loading	200000		453104		433688		349671		261907		4411		33232		2348
Original Total Daily Loading	400000		738664		651584		722941		340994		7062		49795		4298
% StarKist Load Contribution	50		39		33		52		23		38		33		45
% VCS Samoa Load Contribution	50		61		67		48		77		62		67		55
1993 Load - 1990 Load	0		-212135		-269581		-347519		-190827		-2116		-22936		-29321
% Change 1990 to Original 1993	0		-22		-29		-32		-36		-23		-32		-87

[5] On December 8, 1992, StarKist Samoa and VCS Samoa Packing submitted their MPRSA §102 permit applications to EPA Region IX. On May 27, 1993, EPA Region IX determined that the applications were complete.

[6] Volumes of fish processing wastes in the canneries' December 8, 1992 applications.

[7] Permit limits calculated by EPA Region IX based on waste stream data collected under MPRSA §102 permits OD 90-01 and OD 90-02.

Evaluation of Fish Cannery Loadings at the American Samoa Ocean Disposal Site

August 1993

Changes to StarKist Permit App.	Volume[8] gal/day	TS[7] mg/L	TS[4] lb/day	TVS mg/L	TVS lb/day	BOD mg/L	BOD lb/day	O&G mg/L	O&G lb/day	TP mg/L	TP lb/day	TN mg/L	TN lb/day	NH3 mg/L	NH3 lb/day
Requested OD 93-01 DAF Sludge	30000	163430	40773	136180	33974	232320	57959	64100	15992	1640	409	7020	1751	1830	457
Requested OD 93-01 Cooker Juice	70000	114180	66466	63400	36906	185150	107780	11810	6875	940	547	7560	4401	690	402
Requested OD 93-01 Press Liquor	100000	327870	272657	292280	243060	310790	258453	112080	93206	3160	2628	20360	16931	1390	1156
Requested StarKist Daily Loading	200000		379896		313941		424192		116072		3584		23084		2014
Same OD 93-02 DAF Sludge	60000	461790	230415	455560	227306	349350	174312	395700	197438	3790	1891	21820	10887	3470	1731
Same OD 93-02 Precooker Water	100000	115180	95784	84450	70229	64650	53763	11180	9297	1850	1538	12830	10669	410	341
Same OD 93-02 Press Water	40000	381510	126905	409310	136153	365550	121597	165860	55172	2950	981	35100	11676	830	276
Same VCS Samoa Daily Loading	200000		453104		433688		349671		261907		4411		33232		2348
Proposed Total Daily Loading	400000		833000		747628		773863		377980		7995		56316		4363
% StarKist Load Contribution	50		46		42		55		31		45		41		46
% Change from Original SK App.	0		7		9		3		8		7		8		1
% VCS Samoa Load Contribution	50		54		58		45		69		55		59		54
SK 1993 Requested Load - SK 1990 Load	0		-117799		-173537		-296598		-153842		-1183		-16414		-29256
% Change SK 1990 to SK Requested 1993	0		-12		-19		-28		-29		-13		-23		-87

[8] On June 30, 1993, StarKist Samoa requested changes in the volumes of fish processing wastes generated at their plant that could be disposed at the ocean site. StarKist Samoa made the following request: a) change DAF Sludge from 60,000 gallons per day to 30,000 gallons per day, b) change Cooker Juice from 100,000 gallons per day to 70,000 gallons per day, and c) change Press Liquor from 40,000 gallons per day to 100,000 gallons per day.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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SUBJECT: Issuance of Special Ocean Dumping Permits for StarKist Samoa, Inc. (OD 93-01) and VCS Samoa Packing Company, Inc. (OD 93-02)

Dear Interested Party:

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Information gathered during the term of the new permits will be used to continue EPA Region IX's management of the fish processing waste disposal program off American Samoa. If at any time EPA Region IX determines that violations of either permit occur or disposal operations do not meet the ocean dumping regulations at 40 C.F.R. Parts 220 through 228, we will reconsider our authorization for use of the designated site.

If you have any questions regarding the ocean dumping permits, please contact Brian Ross at (415) 744-1979 or Patricia Young at (415) 744-1594.

Sincerely,

Clarence Tenley, Acting Chief
Wetlands, Oceans and Estuaries Branch

Enclosures (3)

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Francesca Cava, Chief
Sanctuaries and Reserves Division
NOAA
1305 East-West Highway
Silver Spring, MD 20910

Michael Lee, Chief
Environmental Branch
Corps of Engineers, Honolulu District
Building 230
Fort Shafter, HI 96858-5440

Commanding Officer
Marine Safety Office
433 Ala Moana Boulevard
Honolulu, HI 96813

Chief
Marine and Wetlands Protection Branch
U.S. EPA, Region II
26 Federal Plaza
New York, NY 10278

Robert Howard
Coastal Regulatory Unit
U.S. EPA, Region IV
345 Courtland Street, N.E.
Atlanta, GA 30365

Patricia S. Port
Regional Environmental Officer
Department of Interior
450 Golden Gate Avenue, Room 14444
San Francisco, CA 94102

James L. Cox, Director
Engineering and Environmental Affairs
Van Camp Seafood Company, Inc.
4510 Executive Drive, Suite 300
San Diego, CA 92121-3029

Thomas J. Gilmore, Counsel
Van Camp Seafood Company, Inc.
4510 Executive Drive, Suite 300
San Diego, CA 92121-4566

FV TASMAN SEA
StarKist Samoa, Inc.
Attn: Bud Hayes
Engineering Dept.
P.O. Box 368
Pago Pago, American Samoa 96799

John Lishman
OWOW (WH-556F)
U.S. Environmental Protection Agency
401 M Street, S.W.
Washington, D.C. 20460

Vicki Tsuhako
U.S. Environmental Protection Agency
P.O. Box 50003
300 Ala Moana Boulevard, Room 5124
Honolulu, HI 96850

Alan Marmelstein
U.S. Fish and Wildlife Service
300 Ala Moana Boulevard, Room 5302
P.O. Box 50007
Honolulu, HI 96580

Kitty Simonds, Executive Director
Western Pacific Regional
Fishery Management Council
1164 Bishop Street, Suite 1405
Honolulu, HI 96813

Alex Lechich
Marine and Wetlands Protection Branch
U.S. EPA, Region II
26 Federal Plaza
New York, NY 10278

Suzy Cantor-McKinny
Marine and Estuarine Section
U.S. EPA, Region VI
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

Rolf Wallentron
U.S. Fish and Wildlife Service
Lloyd Five Hundred Building, Suite 1692
500 Multnomah Street
Portland, OR 97232
Returned

Maurice W. Callaghan
General Manager
StarKist Samoa, Inc.
P.O. Box 368
Pago Pago, American Samoa 96799

John Ciko, Assistant General Counsel
H.J. Heinz Company
P.O. Box 57
Pittsburgh, PA 15230-0057

Nancy Fanning, Director
Office of Territorial Liaison
Territorial and International Affairs
Department of the Interior
Washington, D.C. 20460

David Redford
OWOW (WH-556F)
U.S. Environmental Protection Agency
401 M Street, S.W.
Washington, D.C. 20460

Chief
Engineering Division
Corps of Engineers, Honolulu District
Building 230
Fort Shafter, HI 96858-5440

Dr. John Naughton
NMFS, Southwest Region
Western Pacific Program Office
2570 Dole Street
Honolulu, HI 96822-2396

Kymberlee Keckler
Water Quality Branch (WQE-1900)
U.S. EPA, Region I
JFK Federal Building, Room 2203
Boston, MA 02203

Bill Muir
Regional Oceanographer
U.S. EPA, Region III
841 Chestnut Building
Philadelphia, PA 19107

John Malek
Environmental Evaluation Branch (WD-138)
U.S. EPA, Region X
1200 Sixth Avenue
Seattle, WA 98101

Regional Director
National Marine Fisheries Service
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, CA 90802-4213

Togipa Tausaga, Director
ASEPA
Office of the Governor
American Samoa Government
Pago Pago, American Samoa 96799

Lelei Peau, Manager
AS Coastal Management Program
Office of the Governor
American Samoa Government
Pago Pago, American Samoa 96799

Malaetasi Togufau
Attorney General
Office of the Governor
American Samoa Government
Pago Pago, American Samoa 96799

Executive Director
Pacific Seafood Industries
P.O. Box 2511
Santa Barbara, CA 93120

Dr. George Losey
Acting Director
Hawaii Institute of Marine Biology
P.O. Box 1346
Kaneohe, HI 96744

John M. Ravnik
Seafarers International Union of North America
350 Fremont Street
San Francisco, CA 94105

Ronald A. Zumbrun
President
Pacific Legal Foundation
2700 Gateway Oaks Drive, #200
Sacramento, CA 95833

Ajay Agrawal
AGI International
1932 First Avenue, Suite 507
Seattle, Washington 98101

Sheila Wiegman, Env. Coord.
ASEPA
Office of the Governor
American Samoa Government
Pago Pago, American Samoa 96799

Ray Tulafono, Director
Office of Marine and Wildlife Resources
P.O. Box 3730
Pago Pago, American Samoa 96799

David Chatfield Returned
Executive Director
Greenpeace Pacific Southwest
Fort Mason Center, Building E
San Francisco, CA 94123

Dr. Jay D. Hair
Executive Vice President
National Wildlife Federation
1412 16th Street, N.W.
Washington, D.C. 20236

Jacqueline N. Miller
University of Hawaii
Environmental Center
Crawford 317, 2550 Campus Road
Honolulu, HI 96822

John Enright
President
Le Vaomatua
P.O. Box B
Pago Pago, American Samoa 96799

Jerry Norris
Executive Director
Pacific Basin Development Council
567 South King Street, Suite 325
Honolulu, HI 96813

Liaison Officer
U.S. Coast Guard Liaison Office
P.O. Box 249
Pago Pago, American Samoa 96799

Alfonso Galea'i, Director
Economic Development Planning Office
Office of the Governor
American Samoa Government
Pago Pago, American Samoa 96799

Executive Director
Fisheries Protection Institution
P.O. Box 867
Summerland, CA 93067

William Herlong
Covington and Burling
1201 Pennsylvania Avenue, N.W.
P.O. Box 7566
Washington, D.C. 20044

Dr. James Parrish
Hawaii Cooperative Fisheries Research Unit
2528 The Mall
University of Hawaii
Honolulu, HI 96822

Dr. Dorothy Soule, Director
Harbors Environmental Projects
University of Southern California
Allan Hancock Foundation 139
Los Angeles, CA 90089-0371

Dr. Joseph D. Germano
Director of Environmental Studies
SAIC
221 Third Street
Newport, RI 02840

OPINAP FAX TRANSMISSION

USEPA, Region IX
Office of Pacific Island and Native American Programs (E-4)
75 Hawthorne Street
San Francisco, CA 94105

FAX: (415) 744-1604
PHONE: (415) 744-1596

DATE: 9/1/93 PAGES: 2, (incl. cover)

TO: Samoa News ORG:

FAX NO: 684/633-4864 PHONE NO:

FROM: Pat Young PHONE NO: (415) 744 - 1594

NOTE: FYI. Press release on ocean disposal permits for canneries.

Did your company ever get paid for the public notice we had you run re: these permits (in June)? I received several bills and forwarded them to Accounting which says the bill was procesed.

****
*** ACTIVITY REPORT ***
****

TRANSMISSION OK

TX/RX NO.	8371
CONNECTION TEL	90116846334864
CONNECTION ID	SAMOA NEWS
START TIME	09/01 16:16
USAGE TIME	00'44
PAGES	1
RESULT	OK

Ocean disposal press release

****
*** ACTIVITY REPORT ***
****

TRANSMISSION OK

TX/RX NO.	8373
CONNECTION TEL	90116846334864
CONNECTION ID	SAMOA NEWS
START TIME	09/01 16:20
USAGE TIME	00'48
PAGES	1
RESULT	OK

United States
Environmental Protection
Agency

Regional Administrator
75 Hawthorne Street
San Francisco, CA 94105-3901

Region 9
Arizona, California
Hawaii, Nevada
Pacific Islands

EPA Environmental News

FOR IMMEDIATE RELEASE: September 1, 1993

Contact: Bill Glenn, U.S. EPA
(415) 744-1589

U.S. EPA ISSUES FINAL PERMITS TO AMERICAN SAMOA FISH CANNERIES

(San Francisco)--The U.S. Environmental Protection Agency (U.S. EPA) today announced the issuance of final permits to StarKist Samoa and VCS Samoa Packing to dispose of fish processing wastes in the ocean off Pago Pago, American Samoa.

The permits will allow the canneries to continue dumping fish processing wastes about six nautical miles off Pago Pago through August 31, 1996. The permits require the canneries to conduct monthly and quarterly testing of the waste stream and the disposal area to ensure that disposal operations meet federal guidelines and to document the effects of the dumping at the ocean disposal site.

The permits also require a computerized navigation system to provide more accurate location of the disposal site and a record of the vessel's disposal operations. In addition, improved reporting forms have been prepared for submittal to U.S. EPA on a quarterly instead of a semiannual basis.

The permits were issued under the federal Marine Protection, Research, and Sanctuaries Act. The original permits expired on July 31, 1993, but were administratively extended to Sept. 1 to allow for response to public comments on the draft permits issued in June.

# # #

OPINAP FAX TRANSMISSION

USEPA, Region IX
Office of Pacific Island and Native American Programs (E-4)
75 Hawthorne Street
San Francisco, CA 94105

FAX: (415) 744-1604
PHONE: (415) 744-1596

DATE: 9/1/93 PAGES: 3 (incl. cover)

TO: Sheila Wiegman ORG: ASEPA

FAX NO: _____ PHONE NO: _____

FROM: Pat PHONE NO: (415) 744 - 1594

NOTE: FYI - Press release being faxed ~~sent~~ to Hawaii newspaper and Samoa News today. I forgot to ask whether you received your copies. We DHL'd your copy + copies to canneries last Thursday, 8/26. Jim Cox + Norm Wei received their copies already.

Pls. pass attached notes to Siniva + Suavai.

JUL 19 1993 Sm

Anthony said already paid
-1863

Samoa News, Ltd.
P.O. Box 909
Pago Pago, As 96799

Jun 30, 1993

USEPA-Region 9 Office of
Pacific&Native Ams.Prog.
75 Hawthorne St.
San Francisco,Ca.,94105

STATEMENT

DATE	INV#	DESCRIPTION	CHARGES	PAYMENTS	BALANCE
6/8/93	24094	Rec.Inv.#6029 6/9	250.00		250.00

CURRENT	30 DAYS	60 DAYS	90 DAYS	AMOUNT DUE
250.00	0.00	0.00	0.00	250.00

OPINAP FAX TRANSMISSION
USEPA Region 9
Office of Pacific Island and Native American Programs (E-4)
75 Hawthorne Street
San Francisco, CA 94105
FAX NO: (415) 744-1604
VERIFICATION NO: (415) 744-1599

DATE: 6/7/93 PAGES (incl. cover): 1

TO: Vince Iuli, Advertising Manager

ORG: American Samoa News

SUBJECT: Revised Cost for Publication of Public Notice

FAX NO. 684/633-4864 PHONE NO: 684/633-5599

FROM: Pat Young, American Samoa Program Manager
USEPA Region 9
Phone: (415) 744-1594

As we discused today, our original advertising order cost is being revised from $120 to $250 for a one-time publication of the public notice faxed to you on June 2. The original cost of $120 was a misunderstanding on my part as to what constituted a prepaid order. As I understand it now, an advertisement order is not a prepaid order and is thus subject to the $250 minimum charge.

Please revise our advertising order to reflect this increased amount. As we discussed, the public notice will be printed in tomorrow's paper, June 8, 1993. Thank you. If you have any questions, call or fax me at the above numbers.

cc: Pat Cotter, USEPA

P.O. Box 909 • Pago Pago, AS 9679[illegible]
phone: [684] 633-5599 • phax: [684] 633-486[illegible]

samoa new

6/7/93 Talked to Vince - will print notice tomorrow. Airg P.O. cost to $250 as per our conversation.

DATE THIS FAX SENT: Wednesday, May 26, 1993
PERSON TO WHOM THIS FAX SENT: **PAT YOUNG**
FAX NUMBER TO WHICH THIS FAX SENT: 1-1-415-744-1604
NUMBER OF PAGES (INCLUDING THIS ONE): One (1)

Pat,

Thanks for your fax! Your request fits in our 3 columns by 16 inch ad (6 inches wide, 16 inches tall) which costs $120 one time rate.

If you choose to run it 2, 3 or 4 times in consecutive days, the cost is $90 per run. If you run it 5 consecutive times or more, it becomes half-price of the one time rate, which is $60 per run. If you choose to run it ~~once~~ a week, it is a ~~$120 per run prepaid.~~

However, for our overseas customers that wish to charge, our minimum order is $250. I will sell you 3 runs for $250.

Please advise.

Regards,

Vince Iuli
Advertising Manager

Evava

refax 06/02

Are you agreeing to paying $250 for the one time rate? Yes charge estimated cost to $250

It cannot run unless it is prepaid or minimum order $250

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

Editor
American Samoa News
P.O. Box 909
Pago Pago, American Samoa 96799

MAY 27 1993

RE: Printing of the Public Notice for Two Ocean Dumping Permits

Dear Editor:

Enclosed is advertisement order for $120, as quoted by your fax of May 26, 1993, and a copy of a public notice for announcing applications for special ocean dumping permits by StarKist Samoa, Inc. and VCS Samoa Packing Company, and a tentative determination by the U.S. Environmental Protection, Region IX to issue the permits. Please schedule the enclosed public notice to appear in the Classified Advertisement, Legal Notice Section, of your newspaper as soon as possible for one time only. Please use the minium amount of space necessary to produce a legible legal advertisement.

Upon issuance of the public notice in your newspaper, please provide our office with two affidavits or proofs of publication. The two affidavits and a copy of the advertising order should be sent to:

Janet Hashimoto, Chief
Marine Protection Section (W-7-1)
U.S. Environmental Protection Agency, Region IX
75 Hawthorne Street
San Francisco, California 94105-3901

If you have any questions on in this matter please call me at (415) 744-1156, or you may call Patricia Young at (415) 744-1594.

Sincerely,

David Stirratt
for

Janet Hashimoto, Chief
Marine Protection Section (W-7-1)

Enclosures (2)

OPINAP FAX TRANSMISSION
USEPA Region 9
Office of Pacific Island and Native American Programs (E-4)
75 Hawthorne Street
San Francisco, CA 94105
FAX NO: (415) 744-1604
VERIFICATION NO: (415) 744-1599

DATE: 6/2/93 PAGES (incl. cover): 1

TO: Vince Iuli, Advertising Manager

ORG: American Samoa News

SUBJECT: Request for Publication of Public Notice

FAX NO. 684/633-4864 PHONE NO: 684/633-5599

FROM: Pat Young, American Samoa Program Manager
USEPA Region 9
Phone: (415) 744-1594

Pat Young

I am faxing you an advertisement order and copy of a public notice for special draft ocean disposal permits for the canneries. As per your fax, the advertisement order is for $120. We would like the public notice published one time only, on or prior to June 7, 1993. I am sending the hard copy of the above to you by DHL today.

Should you have any questions regarding this request, please contact me. I will also be asking Sheila Wiegman to follow up with this request locally if there are any problems. Thank you.

OPINAP FAX TRANSMISSION

USEPA Region 9
Office of Pacific Island and Native American Programs (E-4)
75 Hawthorne Street
San Francisco, CA 94105
FAX NO: (415) 744-1604
VERIFICATION NO: (415) 744-1599

DATE: 5/26/93 PAGES (incl. cover): 1

TO: American Samoa News; Public Notice Advertising Section

SUBJECT: Cost Estimate for Public Notice Publication

FAX NO. 684/633-4864 PHONE NO: 684/633-5599

FROM: Pat Young, American Samoa Program Manager
USEPA Region 9
Phone: (415) 744-1594

We are would like to place a public notice in your paper, to be published one time only, on June 7th, and need an estimate of the cost of publication. There are 3 pages of single-spaced text, on 8 1/2" x 11 sheets of paper, printed in 12 pt. Times Roman font. A copy of the notice is attached.

Please fax me a cost estimate at (415) 744-1604; or I will call later today to discuss. Thank you.

P.O. Box 909 • Pago Pago, AS 96799
phone: [684] 633-5599 • phax: [684] 633-4864

samoa new

DATE THIS FAX SENT: Wednesday, May 26, 1993
PERSON TO WHOM THIS FAX SENT: **PAT YOUNG**
FAX NUMBER TO WHICH THIS FAX SENT: 1-1-415-744-1604
NUMBER OF PAGES (INCLUDING THIS ONE): One (1)

Pat,

Thanks for your fax! Your request fits in our 3 columns by 16 inch ad (6 inches wide, 16 inches tall) which costs $120 one time rate.

If you choose to run it 2, 3 or 4 times in consecutive days, the cost is $90 per run. If you run it 5 consecutive times or more, it becomes half-price of the one time rate, which is $60 per run. If you choose to run it once a week, it is a $120 per run prepaid.

However, for our overseas customers that wish to charge, our minimum order is $250. I will sell you 3 runs for $250.

Please advise.

Regards,

Vince Iuli
Advertising Manager

NOTICE OF APPLICATION AND PROPOSED ACTION
U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA) REGION IX
75 HAWTHORNE STREET
SAN FRANCISCO, CALIFORNIA 94105-3901

Applications for Permits to Transport
and Dump Materials into Ocean Waters

Public Notice for Ocean Dumping Permit Numbers
OD 93-01 and OD 93-02

Pursuant to Section 102 of the Marine Protection, Research and Sanctuaries Act (MPRSA) of 1972, as amended (33 U.S.C. § 1401 et seq.) and 40 C.F.R. § 222.3 of EPA's Ocean Dumping Regulations (42 Fed. Reg. 2462, Jan. 11, 1977), notice is hereby given by this office of complete applications for permits to transport and dispose fish processing wastes into ocean waters of Tutuila Island, American Samoa. The permit applicants are: STARKIST SEAFOOD COMPANY, INC. (an affiliate of H.J. HEINZ COMPANY), 180 East Ocean Blvd., Long Beach, CA 90802-4797 and VAN CAMP SEAFOOD COMPANY, INC., 4510 Executive Dr., Suite 300, San Diego, CA 92121-3029, for their respective subsidiary companies: STARKIST SAMOA, INC., P.O. Box 368, Pago Pago, American Samoa 96799 and VCS SAMOA PACKING COMPANY, INC., P.O. Box 957, Pago Pago, American Samoa 96799.

EPA has made a tentative decision to issue special ocean dumping permits to StarKist Samoa and VCS Samoa Packing Company for a three-year period. The Agency has determined that these permits are required for ocean disposal of fish processing wastes produced at canneries in Pago Pago, American Samoa. The fish processing wastes to be disposed from StarKist Samoa are: dissolved air flotation (DAF) sludge, cooker juice and press liquor. The fish processing wastes to be disposed from VCS Samoa Packing are: DAF sludge, precooker water and press water. Based on dilution levels expected at the designated ocean disposal site, the fish processing wastes are not expected to cause significant long-term impacts to oceanic water quality, marine ecosystems or human health.

The fish processing wastes will be disposed at an ocean disposal site 5.45 nautical miles southeast of Tutuila Island. The ocean disposal site has center coordinates of 14° 24.00' South latitude by 170° 38.20' West longitude and a radius of 1.5 nautical miles. The water depth at the disposal site is about 9,000 feet. This site was designated for use on February 6, 1990 (55 Fed. Reg. 3948) and was used by the two American Samoa canneries for disposal of fish processing wastes under MPRSA § 102 special permits OD 90-01 (StarKist Samoa) and OD 90-02 (VCS Samoa Packing Company) for three years. No significant long-term environmental impacts were found at the site during site monitoring activities.

During the term of special permits OD 93-01 and OD 93-02, the permittees must continue monitoring programs for fish processing waste streams, disposal vessel navigation and monthly ocean disposal site monitoring. Information compiled during the term of these permits and any previous information about ocean disposal of fish processing wastes off

INITIATION OF HEARINGS AND PUBLIC COMMENTS

Within 30 days of the date of this notice, any person may request a public hearing to consider the issuance of, or the conditions to be imposed upon, these permits. Any such request for a public hearing must: 1) be in writing, 2) identify the person requesting the hearing, 3) state any objections to the issuance of, or to the conditions to be imposed upon, these permits, and 4) state the issues which are proposed to be considered at the hearing. Under 40 C.F.R § 222.4, the Regional Administrator's determination on whether to hold a public hearing shall be based on whether the request presents genuine issues of policy or facts amenable to resolution by public hearing.

Comments on the tentative determination and requests for public hearings may be submitted in writing within 30 days of the date of publication of this notice to: Ms. Janet Y. Hashimoto, Chief, Marine Protection Section (W-7-1), U.S. Environmental Protection Agency, Region IX, 75 Hawthorne Street, San Francisco, CA 94105-3901, telephone (415) 744-1156.

The Administrative Record, which includes the applications, the draft permits, the fact sheet describing the permits and changes from special permits OD 90-01 and OD 90-02, is available for public review Monday to Friday from 9:00 a.m. to 4:00 p.m. at the: EPA Region IX Library, 13th Floor, 75 Hawthorne Street, San Francisco, CA, (415) 744-1510; EPA Pacific Island Contact Office, 300 Ala Moana Boulevard, Room 5124, Honolulu, HI, (808) 541-2710; and American Samoa EPA, Executive Office Building, Office of the Governor, Pago Pago, American Samoa, (684) 633-2304.

Copy to Mike

FAX TRANSMITTAL

BLUE•NORTH FISHERIES

Mailing Address:
1130 NW 45th
Seattle, WA 98107
(206) 782-3609
FAX: (206) 782-3242

TO: U.S.E.P.A.
1-415 744 1604

ATTN: PAT YOUNG

DATE 9/22/93
PAGE 1 of 2 PAGES

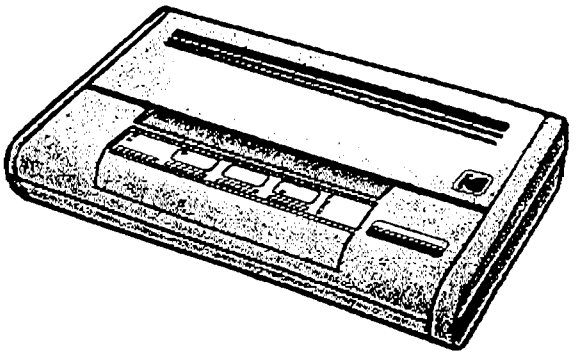
PAT YOUNG.,

HERE ARE SPECS ON PRINTER. WE HAVE 6038 DICONIX 180 SI WITH SERIAL PORT. NEW PLOTTER AND PRINTER HAND CARRIED TO SAMOA TODAY. SHOULD BE OPERATIONAL 9/24/93. WE WILL FAX INITIAL PRINT OUT

MICHAEL BURNS

Diconix 180si Printer

(Item 1475)



Features include:

- Quality mode (192 dpi) or Draft mode (96 dpi) ink-jet printing.
- Top printing speed of 180 cps (in draft mode).
- Compact design, allows for printing on-the-go.
- Epson FX 85 and IBM Proprinter emulations.
- Centronics 8-bit parallel interface.
- Printing Characters: Hevta proportional, Prestige (10 and 12 pt.), Gothic (16, 17.7, 19.2 cpi), and ASCII characters.
- Print options include enlarged/condensed, super-script, subscript, underline, italics, plus empha-sized, double-strike, double-wide and proportional spacing.
- Operating noise is under 45 dB.
- Prints on tractor feed or single sheet (16-22 lbs.) paper or ink-jet transparency.
- Dimensions: 2.4"(H) x 11.7"(W) x 7.68"(D).
- Weighs 3.5 lbs. with batteries.
- Three-year manufacturer's warranty.
- FCC approved.

TASMAN S&A PRINTER

$249.95

6038-Diconix 180si printer with serial port - $349.95

Diconix Accessories

2510 Diconix paper ink cartridge (life of 500 pages) ..... $ ____
2512 Plain paper ink cartridge ..... $ ____

3111 Protech ink jet paper ..... $ ____

2726 Diconix carrying case ..... $ ____
6412 Diconix AC adapter ..... $ ____
2614 Diconix European adapter ..... $ ____
2428 Diconix printer stand ..... $ ____

Qty.	Stock #	Product description	Price
		Guaranteed Performance Plan	
		Configuration Fee	
		Sub Total	
		Tax	
300521		**Total**	

Special Order. Prices subject to change without notice.

Salesperson: _____

Today's date: _____

Ballard Computer™
User Friendly.®

Pat Young

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105
September 14, 1993

Copy to Ota
M. Lee

Michael F. Burns
Blue North Fisheries
1130 NW 45th
Seattle, WA 98107

Re: Printed Record of FV TASMAN SEA's Disposal Trips

Dear Mr. Burns:

Yesterday we received your fax dated 8/31/93, which included a hard copy of a simulated navigational plot, produced by the printer which will be used in American Samoa, for printing out navigational records of the FV TASMAN SEA during its cannery waste disposal operations. We understand that the GPS system on board the vessel will produce a more accurate and defined version of the plots than the faxed copy we received.

We would appreciate receiving a schedule of when you anticipate the printer will be installed and working in American Samoa, as well as the name of the printer being used and its specifications (similar to what you submitted on June 3, 1993 for approval of the FV TASMAN SEA'S navigation system and plotter). When the entire system is working properly in Samoa, please send us a hard copy record of the navigational plot of an actual disposal operation. Copies of the above information should also be submitted to the American Samoa EPA and the Coast Guard Liaison Officer in American Samoa.

I will be in American Samoa the week of October 4th and hope to meet with representatives of both canneries, and possibly tour the disposal vessel. Should you have any questions regarding the above request, please contact me at (415) 744-1594.

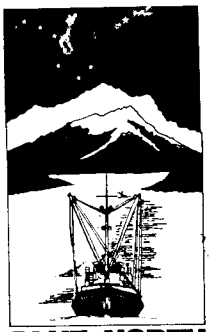
Sincerely,

Pat Young

Pat Young
American Samoa Program Manager
Office of Pacific Island and
Native American Programs (E-4)

cc: Tony Tausaga, ASEPA
Sheila Wiegman, ASEPA
Lt. Cmdr. Richard Kaser, USCG-LO
Jim Cox, VCS Samoa Packing Co.
Norman Wei, StarKist Seafoods
Maurice Callaghan, StarKist Samoa
Michael Macready, Samoa Packing Co.
Bud Hayes, FV TASMAN SEA

Pat Cotter



BLUE•NORTH
FISHERIES

1130 NW 45th
Seattle, WA 98107
(206) 782-3609
Fax (206) 782-3242

6/3/93

Ms. Patricia Young

RE. ocean dumping permit

This letter seeks written approval of the on board navigation equipment of the "Tasman Sea" Both the G.P.S. and the plotter are new, state of the art devices. Please note the plotter is interfaced with the G.P.S. and not Loran. Vessel is underway to Samoa with anticipated arrival June 18, 1993. Thank you for your quick response to this matter

MF Burns pres

MICHAEL F. BURNS

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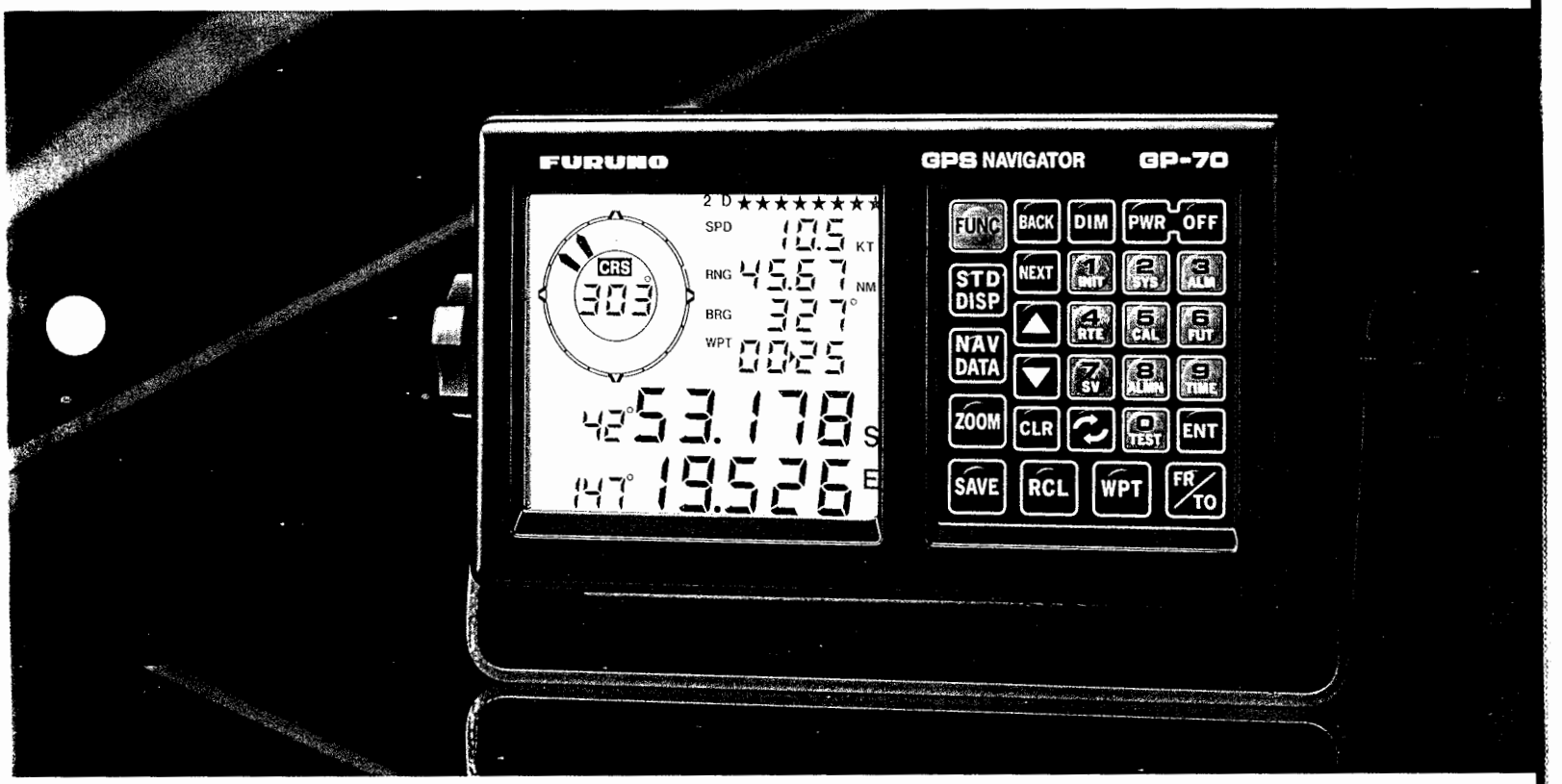
MARINE GPS NAVIGATOR

Model GP-70

With the FURUNO GP-70, smaller craft can enjoy highly-accurate, all-weather real-time GPS navigation.



The GP-70 is a new, cost-effective navigator which brings the latest GPS technology into pleasure or smaller craft.

The GP-70 comprises a new design, slim profile antenna and a compact display. The sensitive, dual-channel receiver tracks up to eight satellites simultaneously to provide exceptional computation speed. In addition, an 8-state Kalman filter is utilized for optimum accuracy in determination of vessel position, course and speed.

The large, backlit, wide view-angle LCD displays various alphanumeric data on a user arranged layout, such as ship's Speed/Course or Velocity to a waypoint, Range/Bearing or ETA/TTG to a waypoint, selected waypoint no. or route no., and ship's position in Lat/Long. A row of stars at the top of the LCD indicates the number of satellites being tracked. The unique graphic indicator at the left gives see-at-a-glance information on ship's Course and Bearing to a waypoint, and Course/Bearing offset or Cross-track error.

In case of man-overboard or other event requiring fast storage of location, the event position and present time can be instantly memorized by pressing [SAVE] key (20 points max.). Operator can register up to 100 waypoints (incl. present position) and 10 routes each containing up to 10 waypoints.

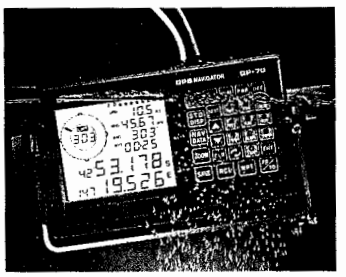
The GP-70 operates from a 10-40 VDC universal supply and power drain is less than 10 W.

- **Large, wide view-angle LCD (100 x 87 mm) displays various nav information in alphanumerics and graphics. It may be illuminated for nighttime viewing.**
- **Compact, sturdy aluminum display cabinet and slim profile 500-gram antenna allow flexible installation**
- **Two user-programmable ports for outputting data in NMEA 0180S, NMEA 0183, or FURUNO CIF format**
- **LCD display and keypad functions can be customized by the user to suit his particular requirements**

Deck Water-Tight

Display cabinet, cable and connectors exceed IEC Pub. 529 IPX6.

IPX6 states "Water from heavy seas or water projected in powerful jets shall not enter the enclosure in harmful quantities."



® The future today with FURUNO's electronics technology.

FURUNO ELECTRIC CO., LTD.

Catalogue No.N-820d

SPECIFICATIONS OF GP-70

RECEIVER CHARACTERISTICS

1. **Receiving System**
   C/A code. 5-satellite tracking on dual channels by using high-speed time-division multiplex
2. **Receiving Frequency**
   L1 (1575.42 MHz)
3. **Position Accuracy** (HDOP≤3)*
   15 m rms without SA (Selective Availability)
   50 m rms with SA implemented
4. **Velocity Accuracy** (HDOP≤3)*
   0.1 knots rms without SA, 0.3 knots rms with SA
5. **Tracking Velocity**
   250 knots

**Accuracy depends on the current satellites' status. GPS accuracy subject to change (SA turned on or off) in accordance with the policy of the US Government.*

PROCESSOR/DISPLAY CHARACTERISTICS

1. **Display**
   100 (w) x 87 (H) mm, backlit, super twist LCD
2. **Date/Time**
   Date, Hour, Minute, and Second in GMT or Local
3. **Memory of Waypoints and Voyage Plan**
   Total 100 waypoints* can be registered.
   (1) Waypoint Navigation: you can select any waypoint as a destination
   (2) Routing Navigation: you can register up to 10 routes each containing up to 10 waypoints
   Range/bearing to the selected waypoint shown digitally.
   **Waypoint no. 00: present position*
4. **Memory of Event Positions (Man overboard)**
   Total 20 points (L/L and date/time)
5. **Alarms (audio-visual)**
   (1) Cross-track error or Approach to border
   (2) Arrival or Anchor watch
   (3) Speed faster or slower than, or between preset value(s)
   (4) Distance-run over preset value
6. **Data Update Rate** Every second
7. **Data Output** 2 ports are provided for:
   (1) NMEA 0183 ($**AAM, $**APA, $**APB, $**BOD, $**BWC, $**BWW, $**GGA, $**GLL, $**RMB, $**RMC, $**VTG, $**WCV, $**WNC, $**WPL, $**XTE, $**ZDA, $**ZLZ, $**ZTG, **: any talker selectable)
   (2) NMEA 0180S (XTE)
   (3) FURUNO CIF (Date/time, L/L, Speed/Course, Wpt L/L, Range/bearing to wpt, Altitude, Event, Route)
8. **Geodetic System**
   WGS-84, WGS-72, Tokyo, North American 1927, European 1950, Australian Geodetic 1984
9. **Environment** IEC 529 IPX6 (Deck-watertight)

POWER SUPPLY

- 10-40 VDC, less than 10 W
- 110/220 VAC, 50-60 Hz, w/optional rectifier PR-62

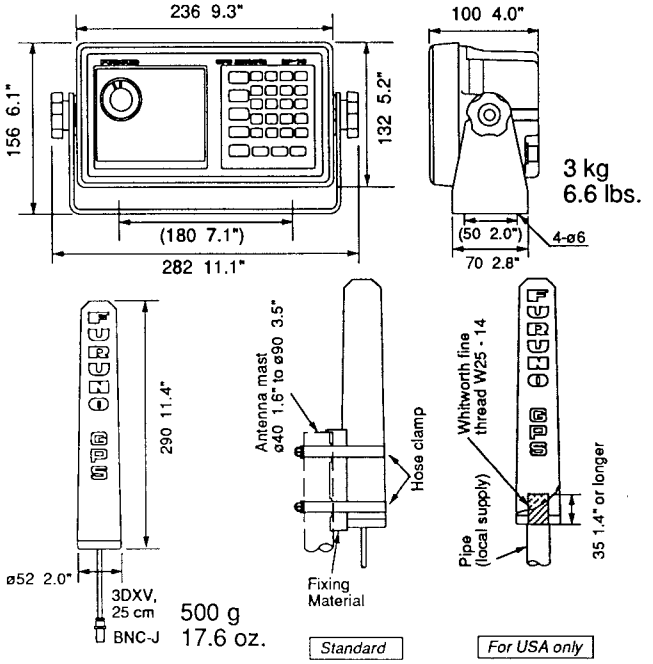
EQUIPMENT LIST

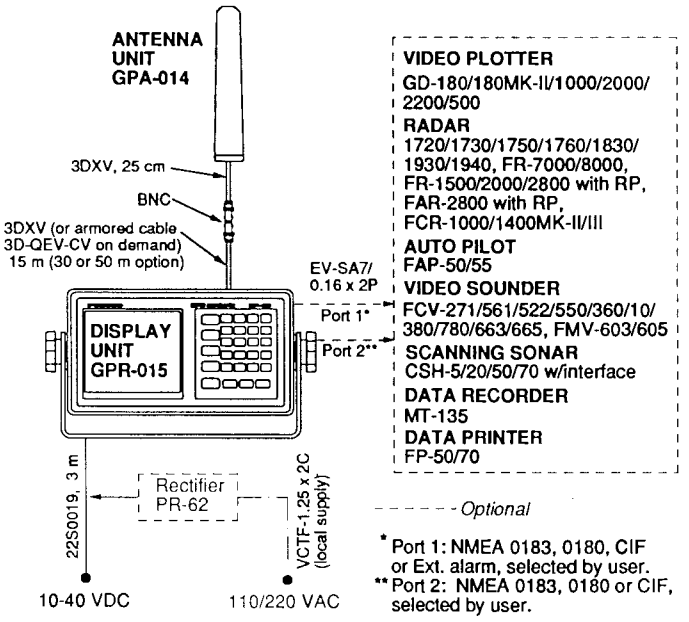
Standard

1. Display Unit GPR-015	1 unit
2. Antenna Unit GPA-014 w/15 m ant. cable	1 unit
3. Installation Materials and Standard Spare Parts	1 set

Option

1. Rectifier PR-62 for 110/220 VAC supply
2. Armored Type Ant Cable Set CP20-3 (30 m) or CP20-5 (50 m)
3. Flush Mount Kit





SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

FURUNO U.S.A., INC.
South San Francisco, California, U.S.A.
Phone: (415)873-9393 Telefax: (415)872-3403
FURUNO (UK) LIMITED
Aberdeen, U.K.
Phone: 0224-595351 Telefax: 0224-575794
FURUNO FRANCE S.A.
Le Plessis Robinson, France
Phone: (1) 46 29 94 29 Telefax: (1) 40 94 08 45
FURUNO DANMARK AS
Hvidovre, Denmark
Phone: 36 77 45 00 Telefax: 36 77 45 01
FURUNO NORGE A/S
Ålesund, Norway
Phone: (071)25642 Telefax: (071)27021
FURUNO SVERIGE AB
V. Frölunda, Sweden
Phone: 031-490220 Telefax: 031-497093

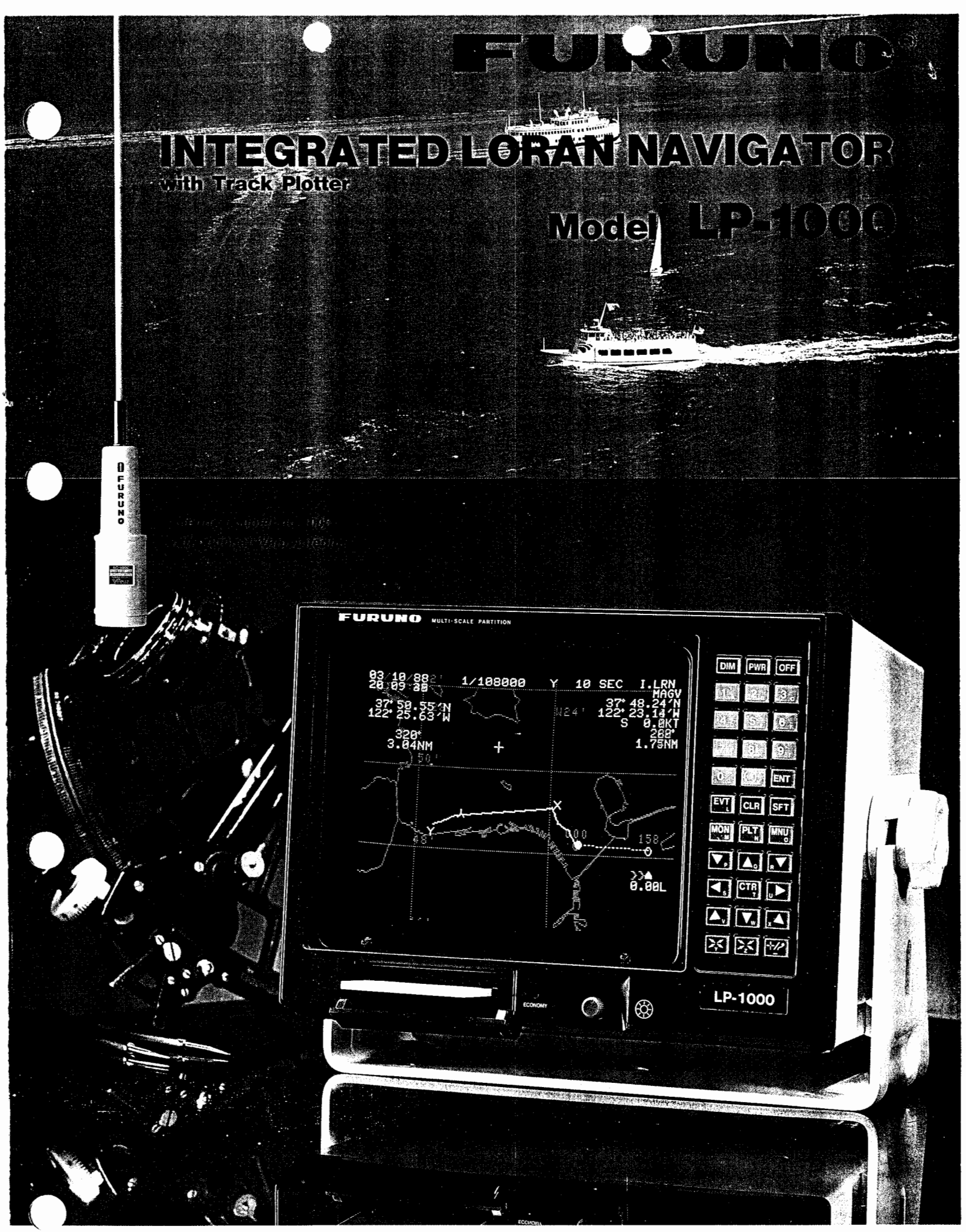
9201XXN Printed in Japan

FURUNO

INTEGRATED LORAN NAVIGATOR

with Track Plotter

Model LP-1000



The future today with FURUNO's electronics technology

Catalogue No. L-133e

All-in-one Lorar Receiver and Video T ck Plotter for Safety and Efficiency in Marine Navigation

The LP-1000 carries FURUNO's consistent theme of Integrated Marine Database Management to a new and very affordable high with a totally integrated Loran-C Receiver and a Track Plotter. The LP-1000 shows all data on a high-brightness, high-resolution 7" diagonal yellow-green monochrome CRT. The CRT is specially treated to reduce glare and has a unique flat face to reduce viewing distortion.

The hardware design is in the traditional FURUNO rugged and reliable fashion. Software design is simple and logical, with a well thought-out menu system that makes an operator's manual almost superfluous after just a few minutes of operation. Splashproof sealed membrane touchpads are backlit for nighttime operation.

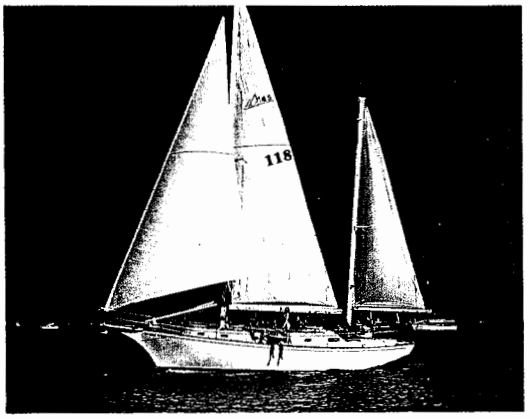
The LP-1000 incorporates a very sensitive receiver, whose dynamic range has been increased to help eliminate overloading problems with strong out-of-band interfering signals, using 5 automatic plus 1 preset notch filters.

The ship's track is calculated internally on 2 separate "pages" whose scale factors may be customized by the operator anywhere between 1/2,000 and 1/5,000,000, or 0.15 and 385 n.m. in horizontal range. A touch of a single switch instantly flips between the two pages without any delay for the computer to replot a picture. We call this unique feature *"Multi-Scale-Partition"*.

On-screen navigational data includes Ship's Position (in Latitude/Longitude or in Loran TD's), Speed/Course, Cross-Track Error, Water Temperature or Water Depth (using external, optional sensors). All parameters, including past courselines, are retained in memory by a built-in lithium battery.

To store courseline and other information permanently, the LP-1000 can use RAM or ROM cards that plug into the front panel slot. A RAM card can store up to 1800 points of trackline and up to 1524 Event marks. ROM cards contain charts digitized at the factory, and can store up to 7 charts per card. These electronic charts can portray coastal or depth contour outlines, plus any points of special interest that may be specified, such as buoys, fishing spots or net hangups.

Power consumption is 19 watts approx, and may be reduced to approximately 12 watts in the unique Economy mode, where the CRT is turned off, while data is still internally updated in memory.



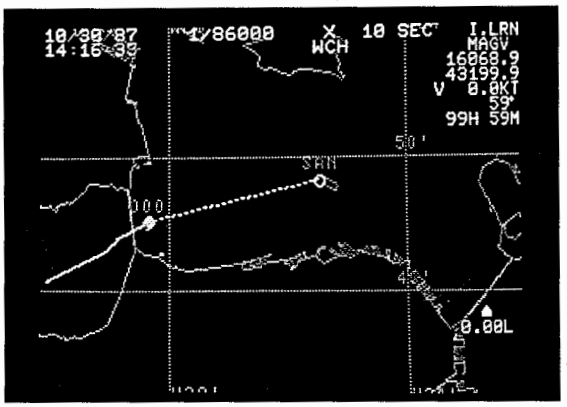
EXTERNAL MEMORIES

RAM Card *for storing courseline and event marks (option) Battery life: 3 years*

ROM Card *for recall of factory digitized chart (option)*

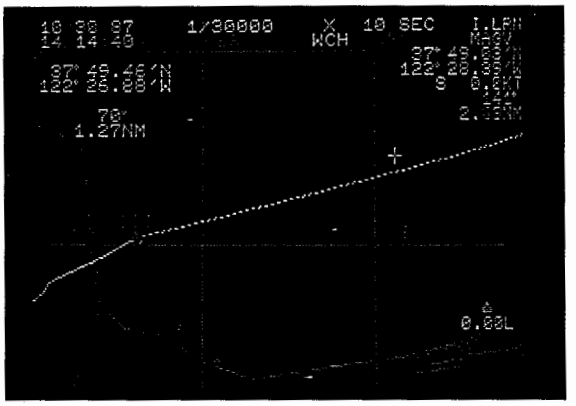
MULTI-SCALE PARTITION

The ship's track is calculated internally on 2 separate "pages". A touch of a single switch instantly flips between the two pages without any delay for the computer to replot a picture.



Map Scale: 1/86,000

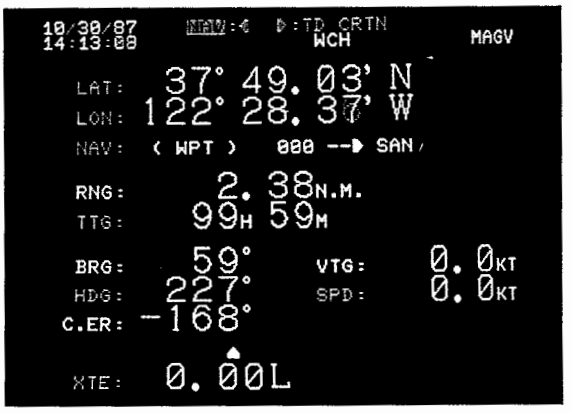
Map Scale: 1/30,000



- **A wide variety of digital navigation data plus track plotting is shown on a bright 7" flat-face CRT**
- **Scale of on-screen chart can be shown in n.m. (0.15 to 385 n.m.) or in scale factor (1/2,000 to 1/5,000,000)**
- **Waypoints defined by three-character alphanumeric identifiers chosen by operator**
- **Accepts external nav. equipment to plot course, such as Satnav, GPS, or Decca**
- **Optional RAM card with built-in keep-alive battery to store courseline and event marks**
- **Navigation to/from Waypoints or by Routes**
- **Built-in battery for 3 years' system back up**
- **Wide selection of external equipment for data input/output in Furuno CIF or NMEA 0183 format**
- **Fully splash protected**

MONITORING WAYPOINT

Pressing [MON] key turns the screen to display position in L/L, Range/TTG to waypoint selected and other numeral data in large characters.



USER FRIENDLY OPERATION

Pressing [MENU] key provides easy selection of functions. You can page the desired function by pressing [◄] or [►] key. All parameters are set on MENU function. Menu function also provides sophisticated nav. information.

Waypoint Selection

SPECIFICATIONS OF LP-1000

RECEIVER CHARACTERISTICS

1. **Receiving Frequency** 100 kHz
2. **Interference Rejection** 5 automatic and 1 preset notch filters
3. **Tracking Speed** 80 knots maximum

PROCESSOR/DISPLAY CHARACTERISTICS

1. **Picture Tube** 7-inch flat-face yellow-green CRT
2. **Alphanumeric Data**
   Ship's position in Lat/Lon, Map Scale, Bearing/range to a waypoint, ship's speed and course, Water temperature or depth (sensor required), L/L of cursor position, Range/Bearing to a cursor position, Event Marks, XTE, Year/Date/Time
3. **Course Plotting**
   Map Scale: 1/2,000 to 1/5,000,000 in 1/1,000 steps or 0.15 - 385 n.m. in 0.08 n.m. steps of horizontal range (Scale chosen by operator)
   provided with 2 pages of plotting picture in different map scales
   Projection: Mercator Projection
   Usable Ground: Between 85°N and 85°S
   Waypoints: 99 points max., identified by 3 alphanumerics
   Plot Interval: The most used 5 intervals may be preset from Hold, 10, 15 ···50, 55 sec, 1, 2···58, 59 min or 0.01 n.m. to 9.99 n. m.in 0.01n.m. steps
4. **Alarms** Arrival or Anchor Watch, XTE, Border and Alarm Clock
5. **Memory**
   Built-in RAM chip retaining courseline 1800 points and 1524 Event points. May be divided into 2, 3, or 6 blocks. Each block may be displayed superimposed on another. (Backed up for 3 years)
6. **Data I/O in NMEA 0183 Sentence**
   Input: Ship L/L ($†† GLL), Course/Speed ($††VTG), Water Temp. ($**MTW), Water Depth ($**DBT)
   Output: Ship L/L ($†† GLL), Course/Speed ($††VTG), Arrival Alarm ($††AAM), Waypoint L/L ($††WPL), R/B from os position to waypoint ($††BOD), Waypoint No. ($††BWC), XTE ($††XTE), TD ($LCGTD)
   TD is output when the built-in Loran receiver is selected.
   †† *Talker Identifier: LC, DE, TR or GP*

POWER SUPPLY

- 11-40 VDC, 19 W approx. (12W approx. in economy mode)
- 110/220 VAC, 50-60 Hz, 20 VA approx. with optional rectifier PR-62

OPTIONAL IC CARDS

1. **RAM Card** Duplicates the built-in RAM chip. 1800 points of course line and 1524 event points (May be divided into 2, 3, or 6 blocks). Battery life: 3 years
2. **ROM Card** Factory digitized charts

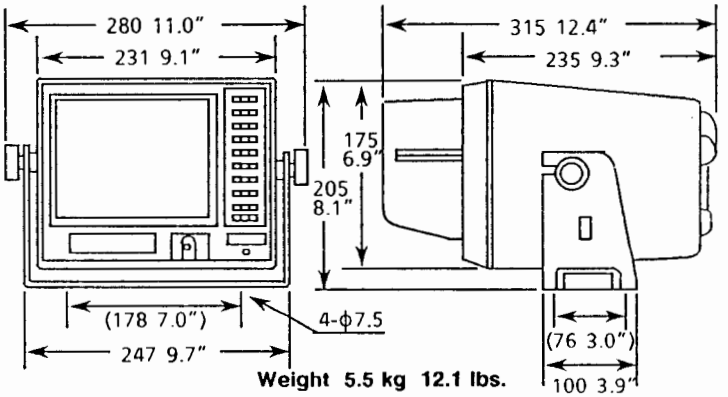
EQUIPMENT LIST

Standard

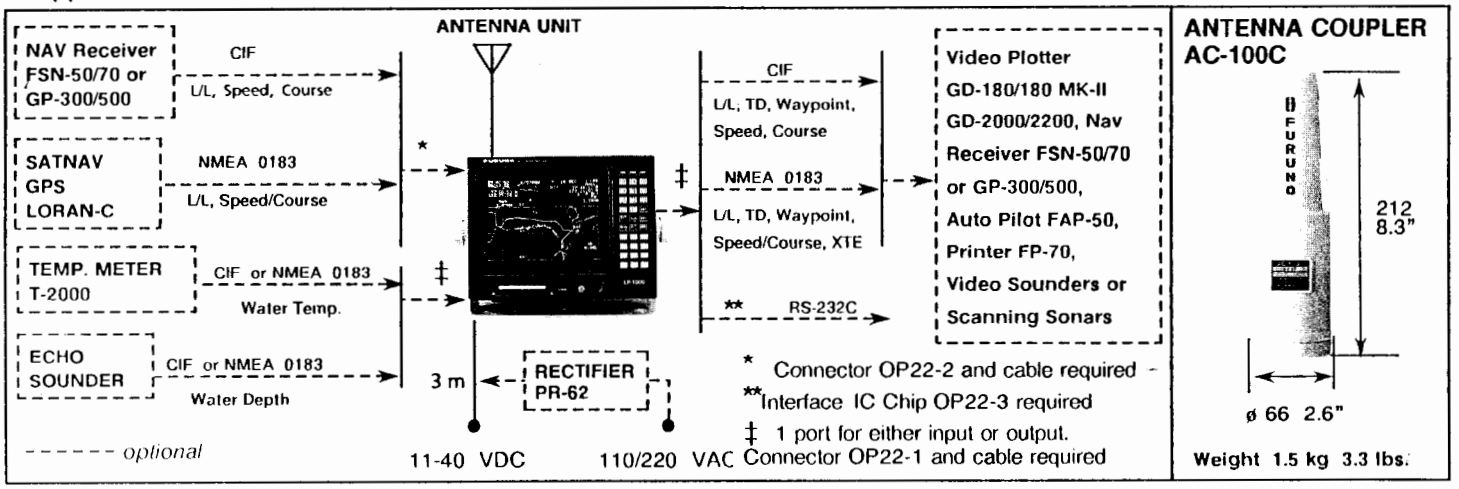
1. Display Unit w/Sun Visor	1 Unit
2. Antenna Coupler AC-100C w/15m ant. cable	1 Unit
3. Installation Materials and Standard Spare Parts	1 Set

Optional

1. Whip Antenna OP04-1 (4 m) or 04S4176 (2.6 m)
2. Rectifier PR-62 for 110/220 VAC supply
3. RAM Card OP22-5 (Battery life: 3 years)
4. ROM Card with Factory-digitized Charts
5. RS-232C interface IC Chip OP22-3
6. Connectors for connection with external equipment (specify OP22-1 or OP22-2)
7. Extension Cables for connection with external nav. equipment CP22-006 (10m) or CP22-007 (20 m)



Weight 5.5 kg 12.1 lbs.



FOR FURTHER INFORMATION, PLEASE CONTACT → NORTHERN MARINE ELECTRONICS
1126 N.W. 45th ST.

Letter to Burns, Wei, Cox

- like copy when installed + running on boat: name / details of equipment as stated in permit

- when will be installed

- will be in Samoa week of Oct 4th.

FAX TRANSMITTAL

BLUE•NORTH FISHERIES

Mailing Address:
1130 NW 45th
Seattle, WA 98107
(206) 782-3569
FAX: (206) 782-3242

TO: ~~PAT~~ E.P.A
1-415 744 1604

ATTN: PAT YOUNG

DATE 8/31/93

PAGE 1 of 2 PAGES

PAT,

This plot was generated by a simulator and is not as precise as the G.P.S. system on board the "Tasman Sea" will produce. That is the drop dump zone will be a true circle; the lat. and long. will be accurate; and the vessel track will be more defined and in its proper location.

Thanks

Mike

FIX : CORRECTION OFF
47 24.18 N
122 45.73 W

SPD: 08.6 kn
HDG: 207.0 True
TO TARGET :
DST: ***.* NM
BRG: ***.* True
CROSS-HAIR :
47 26.71 N
122 41.84 W

WAYPOINT: 25

TRACKING:OFF Mem. 2:07A
AUTOPILOT OFF

CARTOGRAPHY OFF

001.00 NM
CENTER CHART SCALE

NOTE PAD

9-1-93

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic & Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF OCEAN AND COASTAL RESOURCE MANAGEMENT
Washington, D.C. 20235

Fagatele Bay National Marine Sanctuary
P.O. Box 4318
Pago Pago, American Samoa 96799

July 19, 1993

To: Janet Y. Hasimoto, Chief, Marine Protection Section, USEPA

From: Nancy Daschbach, Coordinator, FBNMS

Re: Cannery Ocean Dumping Permits

The National Marine Sanctuary Program would like to express its concern with the ocean dumping permits that may be issued to the two canneries in American Samoa. It has come to our attention that the location of the ocean dump site could allow, under a combination of ocean current and wind conditions, the waste products to drift into the Sanctuary. Under Sanctuary regulations contained in 15 CFR 941.8(a)(3), "No person shall litter, deposit, or discharge any materials or substances of any kind into the waters of the Sanctuary."

To date, we have no way to monitor discharges that may be entering the site. However, we are planning to initiate a water quality monitoring program that could detect such disturbances. We realize that the location of the dumpsite is several miles southeast from the nearest point of the Sanctuary, however, given that the prevailing ocean current is to the west and, for at least half of the year, the prevailing winds are from the southeast, you can appreciate our desire to bring this to your attention.

Although it may be too late for these comments to be incorportated into this permit process, we would like future permits to call attention to the location and vulnerability of this protected area and to alert the canneries to the possibility of legal action should their discharge drift into the Sanctuary. Penalties for the commission of prohibited acts range up to $100,000 per day per violation.

For further information, please feel free to write or to call me at (684) 633-7354.

cc: Jacqueline Rousseau, SRD Pacific Region
Sheila Wiegman, ASEPA

5/28/93 Draft
Permits

Sheila:

Here are the draft ocean disposal permits for agencies/-organizations/canneries in American Samoa. Appreciate your staff's assistance in distributing. One ASEPA copy should be available for public review; the other is for your files.

The procurement order for the Samoa News public notice is not yet ready; I will fax to you and Samoa News when it is ready (early next week I hope) and we will send hard copy of the P.O. by DHL to Samoa News. I faxed them a copy of the public notice and got a price quote of $120 for one time printing. If you could follow up to insure they print the public notice on June 7th we'd greatly appreciate it. Thanks for your help.

Pat

10 plgs

DHL'd 5/28/93

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

MAY 28 1993

MEMORANDUM

SUBJECT: Public Notice of a Tentative Decision to Issue Ocean Dumping Permits to the Canneries in American Samoa

FROM: Amy K. Zimpfer, Chief
Wetlands, Oceans and Estuaries Branch (W-7)

TO: Harry Seraydarian, Director
Water Management Division (W-1)

I am alerting you about an Ocean Dumping permitting action that is proposed for two tuna canneries in American Samoa. I have attached copies of the Fact Sheet, the Notice of Application and the Communication Strategy to show you what we propose to do for these permits. The canneries, StarKist Samoa and VCS Samoa Packing, have been dumping fish processing wastes at a site 5.45 nautical miles southeast of American Samoa for the past three years under MPRSA § 102 special permits. These new permits will be effective from July 31, 1993 through July 31, 1996. Now, we must issue another three-year permit to each cannery for them to continue to dump at the site. Under MPRSA, we can only issue special permits for three years at a time.

The Marine Protection Section has reviewed the canneries' waste stream data and prepared two new permits based on the last three years of disposal activities. The new permits are similar to the last ones, except for the following conditions:

1. Waste stream limits were changed for both canneries based on their waste stream analytical reports. In most cases, the limits were lowered. Only a few limits were raised to reflect the new characteristics of the waste streams (see page 6 of the Fact Sheet).

2. Since the waste streams are quite different compared to the past and a new disposal vessel (the FV TASMAN SEA) is being proposed, Region IX will require that the canneries conduct new suspended phase bioassays and rerun the disposal plume model.

3. Analyses for heavy metals and petroleum hydrocarbons in the waste streams were deleted because the concentrations were low and fish oils interfere significantly with the analyses for petroleum hydrocarbons.

4. A computerized navigation system is required now. This will provide Region IX, ASEPA and the Coast Guard with an accurate record of the disposal vessel's tracks during dumping operations.

5. Two new data reporting forms have been prepared to ensure that the canneries present their waste stream and dumping volume information in a format that is useful to Region IX.

I have approved these two draft permits for publication in the *San Francisco Chronicle* and the *American Samoa News*. The draft permits will be out for review for 30 days. After the Marine Protection Section and the Office of Pacific Island and Native American Programs respond to comments and prepare final permits, you will be asked to sign the final permits before July 31, 1993. We do not anticipate any significant comments which would delay permit issuance. However, should there be a delay, the existing permits can be administratively extended until the new permits are issued. If you have any questions on this proposed action, please call me at 4-1953.

Attachments (3)

cc with attachments: Deanna Weiman (E-1)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

MAY 27 1993

SUBJECT: Notice of Complete Applications and Tentative Decision to Issue Special Ocean Dumping Permits (OD 93-01 and OD 93-02) to StarKist Samoa and VCS Samoa Packing Company

Dear Interested Party:

The U.S. Environmental Protection Agency (EPA), Region IX has determined that StarKist Samoa and VCS Samoa Packing have submitted complete applications for ocean dumping permits to dispose of fish processing wastes off American Samoa. We have prepared two draft special permits (OD 93-01 and OD 93-02) under section 102 of the Marine Protection, Research and Sanctuaries Act (MPRSA). These permits authorize both companies to dispose of fish processing wastes from their canneries into the Pacific Ocean off American Samoa.

On February 6, 1990, Region IX designated an ocean disposal site 5.45 nautical miles southeast of American Samoa for disposal of fish processing wastes. This site was used for three years, from July 1990 to the present, under MPRSA § 102 special permits issued to the StarKist Samoa and VCS Samoa Packing.

EPA Region IX has developed the following documents to support the tentative determination for this special permit:

1. The public notice for EPA Region IX's action.

2. A fact sheet that describes the rationale behind EPA Region IX's decision.

3. The draft special permits which include general and special conditions.

If you have comments on the proposed special permits, please submit your concerns in writing within 30 days of the publication date to me at the EPA address above. If you have any questions regarding the permits, you may call Patricia Young at (415) 744-1594, or me at (415) 744-1156.

Sincerely,

David Stuart

for

Janet Y. Hashimoto, Chief
Marine Protection Section (W-7-1)

Enclosures (3)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

MAY 27 1993

MEMORANDUM

SUBJECT: Notice of Complete Applications and Tentative Decision to Issue Special Ocean Dumping Permits (OD 93-01 and OD 93-02) to StarKist Samoa and VCS Samoa Packing Company

FROM: for Janet Hashimoto, Chief
Marine Protection Section (W-7-1)

TO: John Lishman, Chief
Marine Pollution Control Branch
Oceans and Coastal Protection Division (WH-556F)

Region IX has determined that StarKist Samoa and VCS Samoa Packing have submitted complete applications for ocean dumping permits to dispose of fish processing wastes off American Samoa. We have prepared two draft special permits (OD 93-01 and OD 93-02) under Section 102 of the Marine Protection, Research and Sanctuaries Act (MPRSA). These permits authorize both companies to dispose of fish processing wastes from their canneries into the Pacific Ocean off American Samoa.

On February 6, 1990, Region IX designated an ocean disposal site 5.45 nautical miles southeast of American Samoa for disposal of fish processing wastes. This site was used for three years, from July 1990 to the present, under MPRSA § 102 special permits issued to the StarKist Samoa and VCS Samoa Packing. We do not anticipate major objections to the permits or continued use of the designated site.

EPA Region IX has developed the following documents to support the tentative determination for this special permit:

1. The public notice for EPA Region IX's action.

2. A fact sheet that describes the rationale behind EPA Region IX's decision.

3. The draft special permits which include general and special conditions.

We will keep you informed of our progress on the permits. If you have comments on the proposed special permits, within 30 days of the date on this memorandum, please contact me at (415) 744-1156.

Attachments (4)

cc: David Redford, OCPD
Regional Ocean Dumping Coordinators, Regions I, II, III, IV, VI AND X

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

James L. Cox, Director
Engineering and Environmental Affairs
Van Camp Seafood Company, Inc.
4510 Executive Drive, Suite 300
San Diego, California 92121-3029

MAY 27 1993

RE: Notice of Complete Application and Tentative Decision to Issue a Special Ocean Dumping Permit (OD 93-02) to VCS Samoa Packing

Dear Mr. Cox:

The U.S. Environmental Protection Agency (EPA), Region IX, has determined that VCS Samoa Packing's application for an ocean dumping permit is complete. We have prepared a draft special ocean dumping permit (OD 93-02) under Section 102 of the Marine Protection, Research and Sanctuaries Act (MPRSA) for VCS Samoa Packing's disposal operations. This special permit authorizes disposal of fish processing wastes into the Pacific Ocean off American Samoa for a three-year period. The designated disposal site is 5.45 nautical miles from land (14° 24.00' South latitude by 170° 38.20' West longitude) with a radius of 1.5 nautical miles in about 1,500 fathoms of water.

Information gathered during the term of this special permit and VCS Samoa Packing's previous special permit will be used to continue EPA's management of the fish processing waste disposal program off American Samoa. If, at any time, EPA Region IX determines that the disposal operations do not meet the ocean dumping regulations at 40 C.F.R. Parts 220 through 228, we will reconsider permission to use the designated site.

VCS Samoa Packing, as the permittee, will be required to conduct the site monitoring program contained in the special permit. Please note the requirements for reporting of field and laboratory analyses, analytical detection limits and dump site monitoring procedures.

EPA Region IX has developed the following documents to support the tentative determination for this special permit:

1. The public notice for EPA Region IX's action.

2. A fact sheet that describes the rationale behind EPA Region IX's decision.

3. The draft special permit which includes general and special conditions.

If you have comments on the proposed special permit, please submit your concerns in writing within 30 days of the publication date to me at the EPA address above. If you have any questions regarding the permit, you may call Patricia Young at (415) 744-1594, or me at (415) 744-1156.

Sincerely,

David Stewart
for

Janet Y. Hashimoto, Chief
Marine Protection Section (W-7-1)

Enclosures (3)

cc: Togipa Tausaga, ASEPA
Sheila Wiegman, ASEPA
Lt. Cmdr. Randy Clark, USCG-LO Pago Pago
Michael Macready, VCS Samoa Packing Company
Norman Wei, StarKist Seafood
Maurice Callaghan, StarKist Samoa

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

Norman S. Wei, Senior Manager
Environmental Engineering
StarKist Seafood Company, Inc.
180 East Ocean Boulevard
Long Beach, California 90802-4797

MAY 27 1993

RE: Notice of Complete Application and Tentative Decision to Issue a Special Ocean Dumping Permit (OD 93-01) to StarKist Samoa, Inc.

Dear Mr. Wei:

The U.S. Environmental Protection Agency (EPA), Region IX, has determined that StarKist Samoa's application for an ocean dumping permit is complete. We have prepared a draft special ocean dumping permit (OD 93-01) under Section 102 of the Marine Protection, Research and Sanctuaries Act (MPRSA) for StarKist Samoa's disposal operations. This special permit authorizes disposal of fish processing wastes into the Pacific Ocean off American Samoa for a three-year period. The designated disposal site is 5.45 nautical miles from land (14° 24.00' South latitude by 170° 38.20' West longitude) with a radius of 1.5 nautical miles in about 1,500 fathoms of water.

Information gathered during the term of this special permit and StarKist Samoa's previous special permit will be used to continue EPA's management of the fish processing waste disposal program off American Samoa. If, at any time, EPA Region IX determines that the disposal operations do not meet the ocean dumping regulations at 40 C.F.R. Parts 220 through 228, we will reconsider permission to use the designated site.

StarKist Samoa, as the permittee, will be required to conduct the site monitoring program contained in the special permit. Please note the requirements for reporting of field and laboratory analyses, analytical detection limits and dump site monitoring procedures.

EPA Region IX has developed the following documents to support the tentative determination for this special permit:

1. The public notice for EPA Region IX's action.

2. A fact sheet that describes the rationale behind EPA Region IX's decision.

3. The draft special permit which includes general and special conditions.

If you have comments on the proposed special permit, please submit your concerns in writing within 30 days of the publication date to me at the EPA address above. If you have any questions regarding the permit, you may call Patricia Young at (415) 744-1594, or me at (415) 744-1156.

Sincerely,

David Stuart

for

Janet Y. Hashimoto, Chief
Marine Protection Section (W-7-1)

Enclosures (3)

cc: Togipa Tausaga, ASEPA
Sheila Wiegman, ASEPA
Lt. Cmdr. Randy Clark, USCG-LO Pago Pago
Maurice Callaghan, StarKist Samoa
James Cox, Van Camp Seafood Company
Michael Macready, VCS Samoa Packing Company

MARINE PROTECTION, RESEARCH AND SANCTUARIES ACT § 102
OCEAN DUMPING PERMIT

PERMIT NUMBER AND TYPE: OD 93-01 Special

EFFECTIVE DATE: July 31, 1993

EXPIRATION DATE: July 31, 1996

PERMITTEE:
StarKist Samoa, Inc.
P.O. Box 368
Pago Pago, American Samoa 96799

WASTE GENERATOR:
StarKist Samoa, Inc.
P.O. Box 368
Pago Pago, American Samoa 96799

WASTE GENERATED AT:
StarKist Samoa, Inc.
P.O. Box 368
Pago Pago, American Samoa 96799

PORT OF DEPARTURE: Pago Pago Harbor, American Samoa

WASTE TRANSPORTER:
FV TASMAN SEA
Blue North Fisheries, Inc.
1130 N.W. 45th Street
Seattle, Washington 98107-4626

A special ocean dumping permit is being issued to StarKist Samoa, Inc. because the Regional Administrator of EPA Region IX has determined that disposal of fish processing wastes off American Samoa meets EPA's ocean dumping criteria at 40 C.F.R. Parts 227 and 228. For this permit, the term "fish processing wastes" shall mean either dissolved air flotation (DAF) sludge, cooker juice or press liquor generated at the permittee's plant in Pago Pago, American Samoa.

This special permit authorizes the transportation and dumping into ocean waters of fish processing wastes as described in the special conditions section pursuant to the Marine Protection, Research, and Sanctuaries Act (MPRSA) of 1972 (33 U.S.C. § 1401 *et seq.*) as amended (hereinafter referred to as "the Act"); regulations issued thereunder; and the terms and conditions stated below.

This MPRSA Special Permit does not contain any information collection requirements subject to Office of Management and Budget review under the Paper Work Reduction Act of 1980 (44 U.S.C. § 3501 *et seq.*). This determination has been made because the permit does not require data collection by more than 10 persons.

1. GENERAL CONDITIONS

1.1. Operation under this special ocean dumping permit shall conform to all applicable federal statutes and regulations including, but not limited to, the Act, the Ocean Dumping Ban Act of 1988 (P.L. 100-688), the Marine Plastic Pollution Research and Control Act of 1987 (P.L. 100-220), the Clean Water Act (33 U.S.C. § 1251 *et seq.*), and the Ports and Waterways Safety Act (33 U.S.C. § 1221 *et seq.*).

1.2. All transportation and dumping authorized herein shall be undertaken in a manner consistent with the terms and conditions of this permit. StarKist Samoa, Inc. (hereafter referred to as "the permittee") shall be liable for compliance with all such terms and conditions. The permittee shall be held liable under § 105 of the Act (33 U.S.C. § 1415) if any permit violations occur. During disposal operations when the permittee's fish processing wastes are combined with similar fish processing wastes from other permittees authorized to use the ocean disposal site defined in Special Condition 2.2, all companies shall be held individually liable under § 105 of the Act (33 U.S.C. § 1415) if a permit violation occurs.

1.3. Under § 105 of the Act, any person who violates any provision of the Act, 40 C.F.R. Parts 220 through 228 promulgated thereunder, or any term or condition of this permit shall be liable for a civil penalty of not more than $50,000 per day for each violation. Additionally, any knowing violation of the Act, 40 C.F.R. Parts 220 through 228, or the permit may result in a criminal action being brought with penalties of not more than $50,000 or one year in prison, or both. Violations of the Act or the terms and conditions of this permit include but are not limited to:

1.3.1. Transportation to, and dumping at any location other than that defined in Special Condition 2.2 of this permit;

1.3.2. Transportation and dumping of any material not identified in this permit, more frequently than authorized in this permit, or more than the quantities identified in this permit, unless specifically authorized by a written modification hereto;

1.3.3. Failure to conduct permit monitoring as required in Special Conditions 3.1, 3.3.1, 4.7 and 5.1; or

1.3.4. Failure to file fish processing waste stream reports and disposal site monitoring reports as required in Special Conditions 3.3, 4.7, 5.2 and 5.3.

1.4. Nothing contained herein shall be deemed to authorize, in any way, the transportation from the United States for the purpose of dumping into the ocean waters, the territorial sea, or the contiguous zone, the following materials:

1.4.1. High-level radioactive wastes;

1.4.2. Materials, in whatever form, produced for radiological, chemical, or biological warfare;

1.4.3. Persistent synthetic or natural materials which may float or remain in suspension in the ocean; or

1.4.4. Medical wastes as defined in § 3(k) of the Act.

1.4.5. Flotables, garbage, domestic trash, waste chemicals, solid waste, or any materials prohibited by the Ocean Dumping Ban Act or the Marine Plastic Pollution Research and Control Act.

1.5. Nothing contained herein shall be deemed to authorize, in any way, violation of applicable American Samoa Water Quality Standards. The following water quality standards apply:

Table 1. 1989 American Samoa Water Quality Standards: Oceanic Waters [§24.0207(g)(1-7)].

Parameter	Median Not to Exceed the Given Value
Turbidity	0.20 NTU
Total Phosphorus	11.0 µg-P/L
Total Nitrogen	115.0 µg-N/L
Chlorophyll *a*	0.18 µg/L
Light Penetration Depth	150 feet, to exceed the given value 50% of the time.
Dissolved Oxygen	Not less than 80% of saturation or less than 5.5 mg/L. If the natural level of dissolved oxygen is less than 5.5 mg/L, then the natural dissolved oxygen level shall become the standard.
pH	The pH range shall be 6.5 to 8.6 pH units and within 0.2 pH units of the level which occurs naturally.

1.6. After notice and opportunity for a hearing, this permit may be revised, revoked or limited, in whole or in part, subject only to the provisions of 40 C.F.R. §§ 222.3(b) through 222.3(h) and 40 C.F.R. § 223.2, as a result of a determination by the Regional Administrator of EPA that:

1.6.1. The cumulative impact of the permittee's dumping activities or the aggregate impact of all dumping activities in the dump site designated in Special Condition 2.2 should be categorized as Impact Category I, as defined in 40 C.F.R. § 228.10(c)(1);

1.6.2. There has been a change in circumstances about the management of the disposal site designated in Special Condition 2.2;

1.6.3. The dumping authorized by the permit would violate applicable American Samoa Water Quality Standards;

1.6.4. The dumping authorized can no longer be carried out consistent with the criteria defined at 40 C.F.R. Parts 227 and 228;

1.6.5. The permittee violated any term or condition of the permit;

1.6.6. The permittee misrepresented, or did not disclose all relevant facts in the permit application accurately; or

1.6.7. The permittee did not keep records, engage in monitoring and reporting activities, or to notify appropriate officials in a timely manner of the transportation and dumping activities as specified in any condition of this permit.

1.7. The permittee shall ensure always that facilities, including any vessels associated with the permit, are in good working order to achieve compliance with the terms and conditions of this permit. During all transportation and loading operations, there shall not be a loss of fish processing wastes to any waterway or during transport to the disposal site.

1.8. Any change in the designated fish processing waste transporter may be made at the discretion of the Regional Administrator or his delegate. A written request for such a transfer shall be made by the permittee at least thirty (30) days before the requested transfer date. Written approval by the EPA Regional Administrator must be obtained before such a transfer occurs.

1.9. The permittee shall allow the EPA Regional Administrator, the Commander of the Fourteenth U.S. Coast Guard District (USCG), the Director of the American Samoa Environmental Protection Agency (ASEPA), and/or their authorized representatives to:

1.9.1. Enter into, upon, or through the permittee's premises, vessels, or other premises or vessels under the control of the permittee, where, or in which, a source of material to be dumped is located or in which any records are required to be kept under the terms and conditions of this permit or the Act;

1.9.2. Have access to and copy any records required to be kept under the terms and conditions of this permit or the Act;

1.9.3. Inspect any dumping equipment, navigational system equipment, monitoring equipment or monitoring methods required in this permit;

1.9.4. Sample or require that a sample be drawn, under EPA, USCG, or ASEPA supervision, of any materials discharged or to be discharged; or

1.9.5. Inspect laboratory facilities, data, and quality control records required for compliance with any condition of this permit.

1.10. Material which is regulated by this permit may be disposed of, due to an emergency, to safeguard life at sea in locations or in a manner that does not comply with the terms of this permit. If this occurs, the permittee shall make a full report, according to the provisions of 18 U.S.C. § 1001, within 15 days to the EPA Regional Administrator, the USCG and the ASEPA describing the conditions of this emergency and the actions taken, including the location, the nature and the amount of material disposed.

1.11. The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of rights, nor any infringement of Federal, State or local laws or regulations, nor does it obviate the necessity of obtaining State or local assent required by applicable law for the activity authorized.

1.12. This permit does not authorize or approve the construction of any onshore or offshore physical structures or facilities, or, except as authorized by this permit, the conduct of any work in any navigable waters.

1.13. Unless otherwise provided for herein, all terms used in this permit shall have the meanings assigned to them by the Act or 40 C.F.R. Parts 220 through 228, issued thereunder.

2. SPECIAL CONDITIONS - DISPOSAL SITE AND FISH PROCESSING WASTE CHARACTERIZATION

Special conditions are necessary to define the length of the permit period, identify the disposal site location, describe fish processing wastes and define maximum permitted limits for each fish processing waste.

2.1. Location of the Waste Generator and Duration of the Permit

2.1.1. The material to be dumped shall consist of fish processing wastes, defined in Special Conditions 2.3 and 2.4, generated at the permittee's fish cannery in Pago Pago, American Samoa.

2.1.2. This permit shall become effective on July 31, 1993 and it shall expire three years from the effective data at midnight on July 31, 1996.

2.2. Location of Disposal Site

Disposal of fish processing wastes generated at the location defined in Special Condition 2.1.1 shall be confined to a circular area with a 1.5 nautical mile radius, centered at 14° 24.00' South latitude by 170° 38.30' West longitude.

2.3. Description of Fish Processing Wastes

2.3.1. During the term of this permit, and according to all other terms and conditions of this permit, the permittee is authorized to transport for disposal into ocean waters quantities of fish processing wastes that shall not exceed the following amounts:

Table 2. Volumes of Fish Processing Wastes Authorized for Disposal.

Fish Processing Waste	Maximum Volume Authorized for Disposal (gallons/day)
Dissolved Air Flotation (DAF) Sludge	60,000
Cooker Juice	100,000
Press Liquor	40,000
Maximum Daily Volume	**200,000**

2.4. Fish Processing Waste Limits

Table 3. Limits for DAF Sludge, Cooker Juice and Press Liquor.

Physical or Chemical Parameter (units)[a]	DAF Sludge[b]	Cooker Juice[b]	Press Liquor[b]
Total Solids (mg/L)	163,430	114,180	327,870
Total Volatile Solids (mg/L)	136,180	63,400	292,280
5-Day BOD (mg/L)	232,320	185,150	310,790
Oil and Grease (mg/L)	64,100	11,810	112,080
Total Phosphorus (mg/L)	1,640	940	3,160
Total Nitrogen (mg/L)	7,020	7,560	20,360
Ammonia (mg/L)	1,830	690	1,390
pH (pH units)	5.3 to 6.5	5.9 to 6.3	5.8 to 6.5
Density (g/mL)	0.97 to 1.06	0.98 to 1.06	0.99 to 1.08

a = All calculated values were rounded to the nearest 10, except the density range.

2.4.2. Permitted Maximum Concentrations for each type of fish processing waste were calculated based on an analysis of historical data from the permittee's previous Special Ocean Dumping Permit, number OD 90-01. The calculations followed EPA's recommended procedure for determining permit limits as defined in the EPA document titled: "Guidance Document for Ocean Dumping Permit Writers" (January 30, 1988). EPA will periodically review these limits during the permit to evaluate the accuracy of the limits. If revisions are necessary, EPA will make changes according to the authority defined in the Ocean Dumping Regulations at 40 C.F.R §§ 223.2 through 223.5.

2.4.3. The Permitted Maximum Concentrations, density range and pH range listed above, shall not be exceeded at any time during the term of this permit.

3. SPECIAL CONDITIONS - ANALYSIS OF FISH PROCESSING WASTES

Compliance with the permitted maximum concentrations defined in Special Condition 2.4 shall be determined by monthly monitoring of **each of the fish processing waste stream** permitted for ocean disposal. Additional analyses of fish processing wastes and reporting requirements are defined in this section. Any sampling dates shall be scheduled within the first two weeks of the month to allow enough time for laboratory analyses and report writing to comply with Special Condition 3.3.

3.1. Analyses of Fish Processing Wastes

3.1.1. Concentrations or values of the parameters listed in Special Condition 2.4 and those listed in the table below shall be determined for each fish processing waste stream. A sample of each fish processing waste stream shall be taken before the individual streams are mixed before being pumped into the disposal vessel. A sample shall consist of three replicate samples, taken on the day that sampling is scheduled, pooled for use as a composite sample. The detection limits specified in Table 4 shall be used in all fish processing waste stream analyses.

Table 4. Physical and Chemical Parameters to be Analyzed from Individual Samples of DAF Sludge, Cooker Juice and Press Liquor.

Parameter	Method Detection Limit
Total Solids	10.0 mg/L
Total Volatile Solids	10.0 mg/L
5-Day BOD	10.0 mg/L
Oil and Grease	10.0 mg/L
Total Phosphorus	1.0 mg/L

Parameter	Method Detection Limit
Total Nitrogen	1.0 mg/L
Ammonia	1.0 mg/L
pH	0.1 pH units
Density	0.01 g/mL

3.1.2. All sampling procedures, analytical protocols, and quality control/quality assurance procedures shall be performed according to guidelines specified by EPA Region IX. The following references shall be used by the permittee:

3.1.2.1. 40 C.F.R. Part 136, EPA Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act;

3.1.2.2. Tetra Tech, Incorporated. 1985. Summary of U.S. EPA-approved Methods, Standard Methods and Other Guidance for 301(h) Monitoring Variables. Final program document prepared for the Marine Operations Division, Office of Marine and Estuarine Protection, U.S. Environmental Protection Agency. EPA Contract No. 68-01-693. Tetra Tech, Incorporated, Bellevue, Wa.; and

3.1.2.3. Environmental Protection Agency. 1987. Quality Assurance and Quality Control for 301(h) Monitoring Programs: Guidance on Field and Laboratory Methods. Office of Marine and Estuarine Protection, Washington, D.C. EPA 430/9-86-004.

3.1.3. Any parameters listed in Special Condition 3.1.1 that are shown to be consistently undetected, may be eliminated from further analytical tests. Before elimination of the parameter is permitted, the permittee shall obtain written approval from EPA Region IX and the ASEPA.

3.2. **Analytical Laboratory**

3.2.1. Within 30 days of the effective date of this permit, the name and address of the contract laboratory or laboratories and a description of all analytical test procedures and quality assurance/quality control procedures, including detection limits being used, shall be provided for EPA Region IX approval.

3.2.2. Any potential variation or change in the designated laboratory or analytical procedures shall be reported, in writing, for EPA Region IX approval.

3.2.3. EPA Region IX may require analyses of quality control samples by any laboratories employed to comply with Special Condition 3.1 and Appendix A. Upon request, the permittee shall provide EPA Region IX with the analytical results from such samples.

3.2.4. A complete analysis of parameters, required in Special Condition 3.1, shall be made by the permittee and reported to EPA Region IX and the ASEPA whenever there is a change in the quality of the fish processing waste, process configuration, or fish processing waste treatment. If required by EPA Region IX, bioassays shall be required in addition to parameter analyses.

3.3. **Reporting**

3.3.1. The permittee shall provide EPA Region IX, ASEPA, the National Marine Fisheries Service (NMFS), the U.S. Fish and Wildlife Service (USFWS) and the Western Pacific Regional Fishery Management Council (WPRFMC) with a report, prepared every 6 months during the permit period, that contains the following information:

3.3.1.1. Daily volumes of DAF sludge, Cooker Juice and Press Liquor removed from the permittee's facility, and loaded into the disposal vessel reported in gallons per day using Form 1 (see Appendix B);

3.3.1.2. Monthly fish processing waste stream analyses demonstrating that the fish processing wastes being dumped comply with the permitted limits of parameters listed in Special Condition 2.4 and a summary of the volumes of fish processing wastes disposed at the ocean site using Form 2 (see Appendix B);

3.3.1.3. The monthly amount of alum (aluminum sulfate) and coagulant polymer added to the fish processing waste streams reported in pounds per month (see Forms 1 and 2).

3.3.2. Such reports, including a comparison with the permit limits as required on Forms 1 and 2, shall be submitted to EPA Region IX, ASEPA, NMFS USFWS and WPRFMC within 45 days of the end of the preceding 6-month period for which they were prepared. The reports shall be submitted within this time unless extenuating circumstances are communicated to EPA Region IX and the ASEPA in writing. In addition to a hard copy of Forms 1 and 2, the data contained on Form 1 shall be submitted to EPA Region IX on a 3.5" computer diskette in a format compatible with LOTUS version 2.2.

3.3.3. A summary report of all 6-month reports listed in Special Condition 3.3.1, including a comparisons with permit limits and a detailed discussion of the summary results, shall be submitted by the permittee to EPA and the ASEPA

45 days after the permit expires. All fish processing waste stream data shall be reported in the same format as required in Special Condition 3.3.2.

3.3.4. Upon detection of a violation of any permit condition, the permittee shall send a written notification of this violation to EPA Region IX and the ASEPA within five working days and a detailed written report of the violation shall be sent to the agencies within 15 working days. This notification shall pertain to any permit limits (defined in Special Condition 2.4) that are exceeded, violation of volume limits (defined in Table 2 under Special Condition 2.3.1), and any disposal operation that occurs outside the disposal site defined in Special Condition 2.2.

3.3.5. One year from the effective date of this special permit, the permittee shall submit a report to EPA and ASEPA on the results of suspended phase bioassay tests and reevaluation of the model used to predict the concentrations of fish processing wastes disposed at the designated site. The suspended phase bioassays shall be conducted using at least one species from each of the following three groups: Group 1 = *Mytilus* sp. (mussel), *Crassostrea* sp. (oyster), *Acartia tonsa* (copepod), or *Trypneustes* sp. (sea urchin) larvae; Group 2 = *Holmsemysis costata* (mysid shrimp) or *Penaeus vannamei* (white shrimp); and Group 3 = *Citharicthys stigmaeus* (speckled sanddab) or *Coryphaena hippurus* (dolphinfish) juveniles.

Appropriate suspended phase bioassay protocols, either protocols approved by EPA or protocols published by the American Society for Testing and Materials (ASTM), shall be followed. Suspended particulate phase bioassays shall be run using the following fish processing waste concentrations: 100%, 75%, 50%, 25%, 12.5% and a control (0%). A minimum of five replicates are required per dilution concentration. Concurrent reference toxicant tests shall be conducted when the suspended phase bioassays are run.

A sampling and testing plan shall be submitted to EPA Region IX and ASEPA for approval before the bioassay tests are conducted. The testing plan should also include a proposal to reevaluate the disposal site model using results obtained from the new series of suspended phase bioassays. These bioassays are being required to confirm the toxicity of the fish processing wastes and to reevaluate the disposal operations based on the use of different disposal vessels.

The bioassay and model confirmation report shall contain the following information:

3.3.5.1. INTRODUCTION AND PROJECT DESCRIPTION

The project description should include the following information about fish processing waste toxicity, previous bioassay test results, previous modelling at the ocean disposal site, and the design of the new bioassay tests.

3.3.5.2. MATERIALS AND METHODS

Fish processing waste sampling and sample handling procedures should be described or referenced.

References for laboratory protocols for suspended phase bioassay tests.

1) EPA-approved methods and references.

2) Test species used in each test, the supplier or collection site for each test species, and QA/QC procedures for maintaining the test species.

3) Source of seawater used in reference, control and bioassay tests.

4) Data and statistical analysis procedures.

5) Limiting Permissible Concentration (LPC) calculations.

6) Description of model selected to evaluate dispersal of fish processing wastes at the ocean disposal site. Use of this model shall be approved by EPA Region IX and ASEPA before it is used by the permittee to evaluate the fish processing waste disposal plume.

3.3.5.3. DESCRIPTION OF SAMPLING PROCEDURES

QA/QC procedures and actual sampling procedures used during fish processing waste stream sampling and handling of the samples.

3.3.5.4. FINAL RESULTS, ANALYSIS OF DATA AND DISCUSSION

1) Complete bioassay data tables and summary bioassay tables shall be furnished in the report. All data tables should be typed or produced as a computer printout.

2) The permittee shall analyze the bioassay data and calculate the LPC of the material as defined at 40 C.F.R. § 227.27(a-b).

3) The permittee shall use the LPC in the approved plume model to determine the concentration of fish processing wastes disposed at the designated ocean disposal site which complies with EPA's Ocean Dumping Criteria defined at 40 C.F.R. Parts 227 and 228.

3.3.5.5. REFERENCES

This list should include all references used in the field sampling program, laboratory protocols, LPC calculations, modelling analyses, and historical data

used to evaluate the fish processing waste disposal operations at the designated ocean disposal site.

3.3.5.6. DETAILED QA/QC PLANS AND INFORMATION

The following topics should be addressed in the QA Plan:

1) QA objectives.

2) Organization, responsibilities and personnel qualifications, internal quality control checks.

3) Sampling and analytical procedures.

4) Equipment calibration and maintenance.

5) Sample custody and tracking.

6) documentation, data reduction, and reporting.

7) Data validation.

8) Performance and systems audits.

9) Corrective action.

10) Reports.

4. SPECIAL CONDITIONS - VESSEL OPERATIONS

Specifications for vessel operations are defined to limit dumping activities to the dump site identified in Special Condition 2.2 and to record all dumping activities. Fish processing wastes from the permittee's waste streams and fish processing wastes of other authorized permittees may be loaded into the disposal vessel together. If the waste transported to the disposal site is a combination of materials from the two plants, each permittee shall be liable for all permit conditions regarding disposal of the fish processing wastes. If the fish processing wastes disposed at the site are only generated at the StarKist Samoa plant, then StarKist Samoa shall be solely liable for all permit conditions pertaining to the disposal operation.

4.1. Posting of the Permit

This permit, or a true copy thereof, shall be placed in a conspicuous place on any vessel which is used for the transportation and dumping authorized by this permit. If the dumping vessel is an unmanned barge, the permit or true copy of the permit shall be transferred to the towing vessel.

4.2. Vessel Identification

Every vessel engaged in the transportation of wastes for ocean disposal shall have its name and number painted in letters and numbers at least fourteen (14) inches high on both sides of the vessel. The name and number shall be kept distinctly legible always, and a vessel without such markings shall not be used to transport or dump waste material.

4.3. Determination of the Disposal Location Within the Dump Site

On each disposal trip, the master of the disposal vessel shall determine the location of the disposal operation as follows:

4.3.1. The disposal vessel, as defined under WASTE TRANSPORTER on page 1 of this permit, shall proceed directly to the center of the disposal site at the location specified in Special Condition 2.2.

4.3.2. The master of the vessel shall observe the conditions at the dump site center, noting the vessel's position (latitude and longitude), wind direction and observed surface current direction.

4.3.3. After the conditions defined in Special Condition 4.3.2 have been recorded, the master of the disposal vessel shall proceed 1.1 nautical miles up current from the center of the disposal site and record the position of the disposal vessel (latitude and longitude). This position shall be the starting point for disposal operations for each disposal trip.

4.3.4. The master of the disposal vessel shall prepare a computerized navigational plot of the procedures defined in Special Conditions 4.3.1 to 4.3.4 and supply these to the permittee. The permittee shall submit these computerized navigational plots with the 6-month reports required under Special Condition 3.3.1. The navigational plot shall include:

4.3.4.1. The disposal vessel's course during the entire dumping operation; and

4.3.4.2. The times and location of entry and exit from the disposal site, position and time of arrival at the center of the disposal site, position and time of arrival at the location 1.1 nautical miles up current from the disposal site, beginning and ending of dumping operations, and disposal vessel position plotted every 15 minutes while dumping.

4.3.5. The master of the disposal vessel shall sign and date each computerized navigational plot.

4.3.6. The master of the disposal vessel shall certify that disposal occurred in the manner required by the permit.

4.3.7. The procedures listed in Special Conditions 4.3.1 through 4.3.6 shall be repeated for each disposal trip.

4.4. Disposal Rate and Vessel Speed

4.4.1. The disposal vessel/barge shall discharge the material authorized by this permit beginning at the disposal location as determined by Special Condition 4.3.3. The vessel track shall be in a direction that is perpendicular to the current detected at the center of the disposal site as defined in Special Condition 2.2. Disposal shall occur in a oval shape along an axis at least 0.5 nautical miles on either side of the starting point determined in Special Condition 4.3.3. The entire disposal vessel track shall be within the disposal site boundaries.

4.4.1.1. From June 1 through November 30, the disposal operation at the location plotted in Special Condition 4.3.3. shall be conducted at a rate of 140 gallons per minute per knot, not to exceed 1,400 gallons per minute at a maximum speed of 10 knots.

4.4.1.2. From December 1 through May 31, the disposal operation at the location plotted in Special Condition 4.3.3. shall be conducted at a rate of 120 gallons per minute per knot, not to exceed 1,200 gallons per minute at a maximum speed of 10 knots.

4.5. Computerized Navigational System

The permittee shall use an onboard computerized electronic positioning system to fix the position of the disposal vessel accurately during all dumping operations. The computerized navigational system must be approved by EPA Region IX and the USCG Liaison Office (CGLO) Pago Pago. The permittee shall submit the description, specifications and example plots for the computerized navigational system at least 15 working days before the effective date of the permit. Disposal operations shall not begin until EPA Region IX and CGLO Pago Pago provide the permittee with written approval for the computerized navigation system.

4.6. Permitted Times for Disposal Operations

Dumping operations shall be restricted to daylight hours, unless an emergency exists as defined at 40 C.F.R. § 220.1(c)(4). ASEPA and CGLO Pago Pago shall be notified immediately if an emergency exists and ocean disposal is required to protect human life at sea. No later than 5 working days after the emergency, the permittee and the waste transporter shall provide EPA Region IX, ASEPA and CGLO Pago Pago with a detailed written report on the emergency situation.

4.7. Reporting of the Ocean Dumping Vessel Operations

4.7.1. The waste transporter shall maintain and the permittee shall submit copies of a daily transportation and dumping log, including plots of all information requested in Special Conditions 4.3 and 4.7.2. Copies of the daily logs shall be sent to EPA Region IX, CGLO Pago Pago, and the ASEPA as part of the 6-month report.

4.7.2. The logbook shall contain the following information for each waste disposal trip:

4.7.2.1. Permit number, date and consecutive trip number;

4.7.2.2. Record of contact with ASEPA and CGLO before each trip to the ocean disposal site.

4.7.2.3. The time when loading of the vessel commences and ceases in Pago Pago Harbor;

4.7.2.4. The volume of each waste loaded into the disposal vessel from each fish cannery;

4.7.2.5. The time and navigational position that dumping commences and ceases;

4.7.2.6. A record of vessel speed and direction every 15 minutes during each dumping operation at the disposal site, and a computerized plot of the vessel's course defined in Special Condition 4.3;

4.7.2.7. Discharge rate from the disposal vessel.

4.7.2.8. Observe, note and plot the time and position of any floatable material;

4.7.2.9. Observe, note and plot the wind speed and direction every 30 minutes while dumping wastes at the designated disposal site;

4.7.2.10. Observe and note current direction at the beginning and end of the disposal trip, and the direction of the waste plume at the end of the disposal operation;

4.7.2.11. Observe, note and plot the presence of the previous disposal plume and any unusual occurrences during the disposal trip, or any other information relevant to the assessment of environmental impacts as a result of dumping activities; and

4.7.2.12. Any unusual occurrences noted under Special Condition 4.7.2.9 shall be highlighted in the report defined in Special Condition 3.3.1.

5. SPECIAL CONDITIONS - DUMP SITE MONITORING

The monitoring program for disposal of wastes in the ocean must document effects of disposed wastes on the receiving waters, biota, and beneficial uses of the receiving waters; compliance with EPA's Ocean Dumping Regulations; and determine compliance with permit terms and conditions. Revisions to the monitoring program may be made under the direction of EPA Region IX at any time during the permit term, in compliance with 40 C.F.R. §§ 223.2 and 223.3. This may include a change in the number of parameters to be monitored, the frequency of monitoring, the location of sample stations, or the number and size of samples to be collected.

Implementation of the disposal site monitoring program and all segments of the monitoring program specified in Special Condition 5 and Appendix A shall be the responsibility of the permittee.

5.1. Monitoring Program

The permittee shall conduct the monitoring program, defined in Appendix A, to determine the environmental impacts of ocean dumping of fish processing waste. If possible, monitoring cruises shall be scheduled within the first two weeks of each month to allow enough time for laboratory analysis and report writing in compliance with Special Condition 5.2. The permittee shall notify the ASEPA at least 48 hours before any scheduled monitoring activities.

5.2. Monitoring Reports

Monthly site monitoring reports shall be submitted to EPA Region IX, the ASEPA, NMFS, USFWS and WPRFMC with the 6-month reports as specified in Special Condition 3.3.2. The reports shall include: neatly compiled raw data for all sample analyses, quality assurance/quality control data, statistical analysis of sample variability between stations and within samples for each parameter, and a detailed discussion of the results.

5.3. Final Summary Report

5.3.1. A report shall be submitted to EPA Region IX, ASEPA, NMFS, USFWS and WPRFMC 60 days after the permit expires. This report shall summarize all of the data collected during the waste material and dump site monitoring programs specified in this special permit.

5.3.2. At a minimum, the summary report shall contain the following sections:

5.3.2.1. Introduction (including a summary of previous ocean disposal activities),

5.3.2.2. Location of Sampling Sites,

5.3.2.3. Materials and Methods,

5.3.2.4. Results and Discussion (including comparisons and contrasts with previous MPRSA § 102 research and special permit data related to disposal of fish processing wastes off American Samoa),

5.3.2.5. Conclusions; and

5.3.2.6. References.

5.4. Quality Assurance/Quality Control

5.4.1. All appropriate phases of the monitoring, sampling, and laboratory analytical procedures shall comply with the EPA Region IX-specified protocols and references listed in Special Condition 3.1.2.

5.4.2. The qualifications of the on-site Principal Investigator in charge of the field monitoring operation at the dump site shall be submitted to EPA Region IX and the ASEPA for approval before the initial monitoring cruise. Notification of any change in this individual shall be submitted to EPA Region IX and ASEPA at least 7 days before the cruise is scheduled.

6. SPECIAL CONDITIONS - NOTICE TO REGULATORY AGENCIES

6.1. Notice of Sailing to the U.S. Coast Guard Liaison Office and the American Samoa Environmental Protection Agency

6.1.1. The waste transporter shall provide telephone notification of sailing to CGLO Pago Pago at 633-2299 and the ASEPA at 633-2304 during working hours (7:00 a.m. to 3:30 p.m.) no later than 24 hours before the estimated time of departure for the dump site defined in Special Condition 2.2. A record of contact with both agencies shall be reported with other information for each disposal trip.

6.1.2. The waste transporter shall immediately notify CGLO Pago Pago and the ASEPA upon any changes in the estimated time of departure greater than two hours.

6.1.3. Surveillance of activities at the dump site designated in Special Condition 2.2, may be accomplished by unannounced aerial overflights, a USCG shiprider and/or a ASEPA shiprider who will be on board the towing/conveyance vessel for the entire voyage. Within two hours after receipt of the initial notification the waste transporter will be advised whether or not a shiprider will be assigned to the waste transporter's disposal vessel.

6.1.4. The following information shall be provided to CGLO Pago Pago and the ASEPA in the notification of sailing defined above:

6.1.4.1. The time of departure,

6.1.4.2. Estimated time of arrival at the dump site,

6.1.4.3. Estimated time of departure from the dump site, and

6.1.4.4. Estimated time of return to port.

6.2. Reports and Correspondence

6.2.1. Two copies of all reports and related correspondence required by General Condition 1.10, Special Conditions 3.2, 3.3, 4.3, 4.5, 4.6, 4.7, 5.2, 5.3, 5.4, 6.1, and all other materials, including applications shall be submitted to EPA Region IX at the following address:

Office of Pacific Island and Native American Programs (E-4)
U.S. Environmental Protection Agency, Region IX
75 Hawthorne Street
San Francisco, California 94105-3901
Telephone (415) 744-1974

6.2.2. Two copies of all reports required by General Condition 1.10 and Special Conditions 4.5, 4.6, 4.7 and 6.1 sent to the U.S. Coast Guard shall be submitted to the following address:

Commanding Officer
U.S. Coast Guard Liaison Office
P.0. Box 249
Pago Pago, American Samoa 96799
Telephone (684) 633-2299

6.2.3. Three copies of all reports required by General Condition 1.10 and Special Conditions 3.2, 3.3, 4.3, 4.5, 4.6, 4.7, 5.2, 5.3, 5.4 and 6.1 sent to the American Samoa Environmental Protection Agency shall be submitted to the following address:

Director
American Samoa Environmental Protection Agency
Office of the Governor
Pago Pago, American Samoa 96799
Telephone (684) 633-2304

6.2.4. One copy of the all reports required by Special Conditions 3.3, 5.2 and 5.3 shall be sent to the USFWS, the NMFS and the WPRFMC at the following addresses:

Project Leader
Office of Environmental Services
U.S. Fish and Wildlife Service
300 Ala Moana Boulevard
P.0. Box 50167
Honolulu, Hawaii 96850

Western Pacific Program Officer
National Marine Fisheries Service
2570 Dole Street
Honolulu, Hawaii 96822-2396

Executive Director
Western Pacific Regional Fishery Management Council
1164 Bishop Street, Suite 1405
Honolulu, Hawaii 96813

Signed this _____ day of _____, 1993

For the Regional Administrator:

[To be signed when the Final Permit is prepared]

_____
Harry Seraydarian, Director
Water Management Division
U.S. EPA, Region IX

APPENDIX A

SPECIAL OCEAN DUMPING PERMIT OD 93-01
OCEAN DUMP SITE MONITORING PLAN

7. MONITORING OF RECEIVING WATER

Monitoring of the receiving waters at the disposal site defined in Special Condition 2.2 shall be the responsibility of the permittee. Funding and cooperation for site monitoring may be accomplished through an agreement between permittee and other permittees authorized to use the disposal site. Any agreements negotiated between the permittee and other authorized permittees shall be the sole responsibility of the permittee named in this permit. EPA Region IX requires that a monitoring program be developed that complies with the special conditions defined below.

During each monitoring cruise, the fish processing waste plume from the disposal vessel shall be sampled by taking discrete water samples for the measurement of parameters listed in Special Condition 7.2.4. Results of the first 6-month monitoring report will be evaluated by EPA Region IX to determine whether portions of Special Conditions 7 and/or 8 will be revised. The evaluation will be based on documented sampling results and recommendations by the permittee(s).

7.1. Location of Water Sampling Stations

7.1.1. On each sampling cruise, the latitude and longitude of all sampling stations shall be determined and plotted using an acceptable navigational system.

7.1.2. The Principal Investigator shall ensure that discrete water samples are taken at the locations marked in Figure 1.

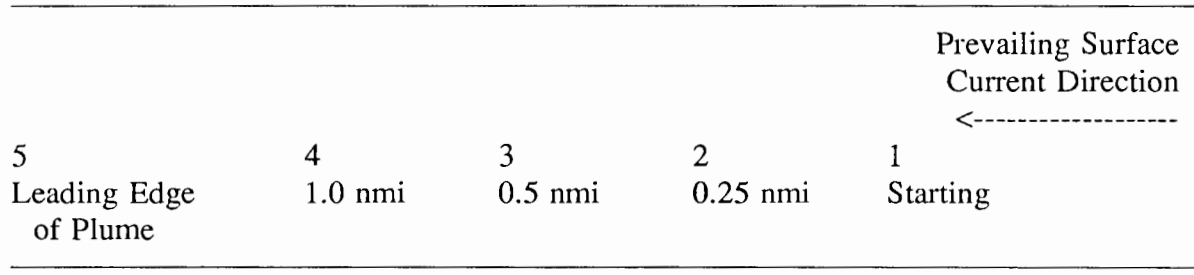


Figure 1. Orientation of Sample Stations (Top View) in the Middle of the Discharge Plume Visually Identified at the Time of Sampling.

7.1.3. The following stations, defined in Figure 1, shall be sampled on each sampling cruise:

7.1.4.1. Station 1 shall be the starting point of the dumping operation as determined in Special Condition 4.3.

7.1.4.2. Station 2 shall be 0.25 nautical miles (nmi) down-current from Station 1.

7.1.4.3. Station 3 shall be 0.5 nmi down-current from Station 1.

7.1.4.4. Station 4 shall be 1.0 nmi down-current from Station 1.

7.1.4.5. Station 5 shall be at the leading edge of the discharge plume, but within the plume.

7.1.4. The Principal Investigator shall ensure that each sampling station is positioned as close as possible to the middle of the discharge plume according to his/her best professional judgment.

7.2. Water Column Characteristics to Be Measured

7.2.1. Discrete water samples at Stations 1, 2, 3, 4, and 5 shall be taken at depths of 1, 3, and 10 meters from the surface at the middle of the plume visually identified by the Principal Investigator.

7.2.2. Surface water conditions shall be recorded at all stations including:

7.2.2.1. Wind speed and direction;

7.2.2.2. Current direction and wave height; and

7.2.2.3. Observations of waste, color (e.g., Forel-Ule color scale), odor, floating materials, grease, oil, scum, and foam.

7.2.3. Water samples shall be obtained using a self-closing 3-liter water sample device at each depth listed in 7.2.1.

7.2.4. Water column parameters analyzed from discrete samples taken at the depths listed in 7.2.1 shall include:

Table 4. Physical and Chemical Parameters to be Analyzed from Water Samples Taken at the Ocean Disposal Site.

Parameter[a]	Method Detection Limit
Total Suspended Solids	10.0 mg/L
Total Volatile Suspended Solids	10.0 mg/L
Oil and Grease	10.0 mg/L

Parameter[a]	Method Detection Limit
Total Phosphorus	1.0 mg/L
Total Nitrogen	1.0 mg/L
Ammonia	1.0 mg/L
pH	0.1 pH units

a = Samples should be acidified to pH <2 with sulfuric acid and refrigerated a 4°C until analysis.

7.2.5. Temperature measurements shall be taken at depths of 1, 3, and 10 meters at the starting point of the disposal operation, as defined in Special Condition 4.3.3.

7.3. **Frequency of Sampling**

7.3.1. Water samples shall be collected when dumping operations occur. Each station listed under Special Condition 7.1 shall be sampled once each month. These samples shall be used to characterize the receiving waters at the disposal site.

7.3.2. Control samples shall be taken at Station 1 before dumping activities.

7.3.3. Station 1 shall be sampled at a point within the plume immediately after discharge operations cease.

7.3.4. Stations 2 through 5 shall be sampled consecutively at distances indicated in Special Condition 7.1.4 to allow efficient sampling of the discharge plume. The time between each sample and the sampling location, beginning with the control sample and ending with the sample collected at the leading edge of the plume, shall be recorded.

7.4. **Water Quality Criteria and Standards**

7.4.1. The LPC of the liquid phase of the waste material shall not be exceeded at the disposal site boundary four hours after disposal operations cease. The LPC is that concentration of the material which, after allowance for initial mixing as defined at 40 C.F.R. § 227.29, does not exceed applicable American Samoa Oceanic Water Quality Standards (see Table 1). EPA Region IX and the ASEPA will evaluate the LPC based on EPA's Ocean Dumping Regulations and the concentration of parameters measured at the stations sampled during the tenure of this permit.

8. MONITORING OF BIOLOGICAL COMMUNITIES

8.1. Pelagic Resources

8.1.1. All sightings of fish, sea turtles, sea birds, or cetaceans near the disposal site shall be recorded including:

8.1.1.1. Time, location and bearing;

8.1.1.2. Species name(s); and

8.1.1.3. Approximate number of individuals.

APPENDIX B - REPORT FORM 1

Monthly Volumes of StarKist Samoa Fish Processing Wastes Loaded Aboard the Disposal Vessel

Month _____ 19__

OD 93-01	DAF Sludge (gallons/day)	Cooker Juice (gallons/day)	Press Liquor (gallons/day)	Total/Day (gallons/day)
Permit Limits	60,000	100,000	40,000	200,000

Disposal Trip Date	DAF Sludge (gallons/day)		Cooker Juice (gallons/day)		Press Liquor (gallons/day)		Total/Day (gallons/day)	

Disposal Trip Date	DAF Sludge (gallons/day)		Cooker Juice (gallons/day)		Press Liquor (gallons/day)		Total/Day (gallons/day)	
Monthly Totals								

NOTE: An asterisk (*) to the right of the fish processing waste volume signifies that a violation of the permit limit has occurred. The number of violations are shown in the Monthly Totals row.

Monthly quantities of alum (aluminum sulfate) and coagulant polymer added to the fish processing waste streams:

Aluminum sulfate: _____ pounds/month

Coagulant polymer: _____ pounds/month

APPENDIX B - REPORT FORM 2
Data Form for 6-Month Report on Waste Stream Analyses for StarKist Samoa MPRSA § 102 Permit #OD 93-01

Reporting Period: From _____ 19__ To _____ 19__

StarKist Samoa - Dissolved Air Flotation (DAF) Sludge

Month & Year	Total Solids (mg/L)	Total Volatile Solids (mg/L)	5-Day Biological Oxygen Demand (mg/L)	Oil and Grease (mg/L)	Total Phosphorus (mg/L)	Total Nitrogen (mg/L)	Ammonia (mg/L)	pH (pH units)	Density (g/mL)
OD 93-01 Permit Limits	163,430	136,180	232,320	64,100	1,640	7,020	1,830	5.3 to 6.5	0.97 to 1.06

NOTE: An asterisk (*) next to the waste concentration signifies that a violation of the permit limit has occurred.

StarKist Samoa - Cooker Juice

Month & Year	Total Solids (mg/L)	Total Volatile Solids (mg/L)	5-Day Biological Oxygen Demand (mg/L)	Oil and Grease (mg/L)	Total Phosphorus (mg/L)	Total Nitrogen (mg/L)	Ammonia (mg/L)	pH (pH units)	Density (g/mL)
OD 93-01 Permit Limits	114,180	63,400	185,150	11,810	940	7,560	690	5.9 to 6.3	0.98 to 1.06

NOTE: An asterisk (*) next to the waste concentration signifies that a violation of the permit limit has occurred.

Data Form for 6-Month Report on Waste Stream Analyses for StarKist Samoa MPRSA § 102 Permit #OD 93-01

Reporting Period: From _____ 19__ To _____ 19__

StarKist Samoa - Press Liquor

Month & Year	Total Solids (mg/L)		Total Volatile Solids (mg/L)		5-Day Biological Oxygen Demand (mg/L)		Oil and Grease (mg/L)		Total Phosphorus (mg/L)		Total Nitrogen (mg/L)		Ammonia (mg/L)		pH (pH units)		Density (g/mL)	
OD 93-01 Permit Limits	327,870		292,280		310,790		112,080		3,160		20,360		1,390		5.8 to 6.5		0.99 to 1.08	

NOTE: An asterisk (*) next to the waste concentration signifies that a violation of the permit limit has occurred.

StarKist Samoa - Summary of Monthly Volumes of Fish Processing Waste Disposed at the Ocean Site and the Amount of Aluminum Sulfate and Coagulant Polymer Added to the Waste Streams.

Month & Year	DAF Sludge (gallons/month)	Cooker Water (gallons/month)	Press Liquor (gallons/month)	Total Fish Processing Waste (gallons/month)	Aluminum sulfate (pounds/month)	Coagulant polymer (pounds/month)
6-Month Totals						

FACT SHEET
SPECIAL OCEAN DUMPING PERMITS
STARKIST SAMOA (OD 93-01) AND VCS SAMOA PACKING COMPANY (OD 93-02)
LOCATED IN PAGO PAGO, AMERICAN SAMOA

I. SUMMARY

The U.S. Environmental Protection Agency (EPA) Region IX has received complete applications from StarKist Samoa, Incorporated and VCS Samoa Packing Company, Incorporated for continued ocean disposal of fish processing wastes off Pago Pago, American Samoa. Disposal of fish processing wastes was permitted under two previous Marine Protection Research and Sanctuaries Act (MPRSA) § 102 Special Permits, OD 90-01 (StarKist Samoa) and OD 90-02 (VCS Samoa Packing). These permits began on July 31, 1990 and are effective until July 30, 1993. Disposal operations occurred at a designated site (55 FR 3948, February 6, 1990) located 5.45 nautical miles from land (14° 24.00' South latitude by 170° 38.20' West longitude) with a radius of 1.5 nautical miles in about 1,500 fathoms of water.

The Regional Administrator has tentatively decided to issue special ocean dumping permits (OD 93-01 and OD 93-02, respectively) to the applicants for ocean disposal of fish processing wastes over a three-year period. This decision has been made according to EPA's authority established in Title I of the Marine Protection, Research and Sanctuaries Act of 1972 (MPRSA) (33 U.S.C. section 1401 et seq.). Section 104B(k)(3)(B) of MPRSA contains an exclusion from the ban on disposal of industrial waste for tuna canneries in American Samoa.

The conditions and monitoring activities defined in OD 93-01 and OD 93-02 are similar to those in previous special and research ocean dumping permits. However, several changes have been made to: 1) permitted waste concentrations, 2) waste stream monitoring, 3) reporting requirements, and 4) disposal vessel operations. The changes are based on evaluation of waste stream data, confirmation of past toxicity tests and plume modeling and new navigation requirements for the disposal vessel.

EPA Region IX has tentatively decided to proceed with issuance of these special permits. Comments on our proposed action will be requested from the permit applicants, the American Samoa Government, Federal agencies, and the public as required under EPA's Ocean Dumping Regulations at 40 C.F.R Parts 220 through 228. Draft special permits and supporting documents are available for public review at the U.S. EPA's Regional Office in the Library on the 13th Floor at 75 Hawthorne Street, San Francisco, California; the U.S. EPA's Pacific Island Contact Office, 300 Ala Moana Boulevard, Honolulu, Hawaii; and the American Samoa Environmental Protection Agency, Executive Office Building, Office of the Governor, Pago Pago, American Samoa. These documents define the principal facts and significant legal, administrative and policy questions considered in the development of the special permits.

II. TENTATIVE DECISION

On December 8, 1992, StarKist Samoa and VCS Samoa Packing Company applied for ocean dumping permits to dispose of their fish cannery wastes at a designated ocean disposal site near Pago Pago, American Samoa. The designated site, used for the past 3 years by both canneries, is located 5.45 nautical miles from land (14° 24.00' South latitude by 170° 38.20' West longitude) with a radius of 1.5 nautical miles in 1,502 fathoms of water [40 C.F.R. § 228.12(b)(74)]. EPA Region IX is planning to grant their applications by issuing a special ocean dumping permit to each cannery which will last for three years.

Current information indicates that disposal of fish processing wastes at the designated site complies with EPA's Ocean Dumping Regulations at 40 C.F.R. Parts 227 and 228. Information obtained during the term of the special permits will be used to evaluate whether the disposal of fish processing wastes continues to comply with criteria defined in EPA's Ocean Dumping Regulations. The permittees must conduct a site monitoring program, including field and laboratory analyses. Results of the monitoring program will be used to document the extent of effects at the ocean disposal site and whether the dumping continues to comply with EPA's Ocean Dumping Regulations.

The proposed dumping during the term of the special permits is expected to have minimal impacts on human health and/or the marine environment, as demonstrated by the monitoring results of the previous special and research ocean dumping permits. The primary environmental impact of the proposed discharges would be short-term increases in turbidity, inorganic nutrients, oil and grease, and ammonia during the dumping events.

Past monitoring studies on the disposal of fish processing wastes off American Samoa show that water quality parameters return to ambient conditions at the boundary of the disposal site following the four hour period of initial mixing (40 C.F.R. § 227.29). To be certain that American Samoa Water Quality Standards would not be violated by the disposal of fish processing wastes, the center of the disposal site was designated 5.45 nautical miles offshore, and restrictive disposal rates and limitations on the waste material constituents are included in the special ocean dumping permits.

III. TERMS OF THE PERMIT

Special ocean dumping permits OD 93-01 and OD 93-02 are similar to OD 90-01 and OD 90-02, except those changes outlined above. The permittees have been disposing of fish cannery wastes, monitoring the waste streams and the disposal site according to the specifications of the past special and research permits.

A. Volumes of Waste Material Proposed for Ocean Disposal

Table 1. Volumes of Fish Processing Waste Authorize for Daily Disposal (see Special Condition 2.3 in both permits).

Fish Processing Waste	StarKist Samoa (gallons/day)	VCS Samoa Packing (gallons/day)	Total Volume (gallons/day)
DAF Sludge	60,000	60,000	120,000
Cooker Juice	100,000	0	100,000
Precooker Water	0	100,000	100,000
Press Liquor	40,000	0	40,000
Press Water	0	40,000	40,000
Daily Maximum	200,000	200,000	400,000

B. Waste Material Limitations in the Proposed Permits (see Special Condition 2.4 in both permits).

Table 2. Fish Processing Waste Limits for the StarKist Samoa's Permit #OD 93-01.

Physical or Chemical Parameter (units)[a]	DAF Sludge	Cooker Juice	Press Liquor
Total Solids (mg/L)	163,430	114,180	327,870
Total Volatile Solids (mg/L)	136,180	63,400	292,280
5-Day BOD (mg/L)	232,320	185,150	310,790
Oil and Grease (mg/L)	64,100	11,810	112,080
Total Phosphorus (mg/L)	1,640	940	3,160
Total Nitrogen (mg/L)	7,020	7,560	20,360
Ammonia (mg/L)	1,830	690	1,390
pH (pH units)	5.3 to 6.5	5.9 to 6.3	5.8 to 6.5
Density (g/mL)	0.97 to 1.06	0.98 to 1.06	0.99 to 1.08

a = All calculated values were rounded to the nearest 10, except the density and pH ranges.

Table 3. Fish Processing Waste Limits for the VCS Samoa Packing's Permit #OD 93-02.

Physical or Chemical Parameter (units)[a]	DAF Sludge	Precooker Water	Press Water
Total Solids (mg/L)	461,790	115,180	381,510
Total Volatile Solids (mg/L)	455,560	84,450	409,310
5-Day BOD (mg/L)	349,350	64,650	365,550
Oil and Grease (mg/L)	395,700	11,180	165,860
Total Phosphorus (mg/L)	3,790	1,850	2,950
Total Nitrogen (mg/L)	21,820	12,830	35,100
Ammonia (mg/L)	3,470	410	830
pH (pH units)	4.8 to 7.0	5.5 to 6.6	5.5 to 6.8
Density (g/mL)	0.86 to 1.05	0.95 to 1.06	0.96 to 1.06

a = All calculated values were rounded to the nearest 10, except the density and pH ranges.

C. Calculation of Permit Limits

1. Data from the previous special ocean dumping permit issued to each cannery were used to calculate all permit limits. The data for each cannery were evaluated separately.

2. The following calculations were made for each set of data using the LOTUS-123 spreadsheet program, version 2.2: maximum and minimum levels; mean, standard deviation and the number of data points.

3. Any data values greater than or less than the mean plus or minus 3 standard deviations, were considered to be outliers. Outlier data points were not used in the permit limit calculations.

4. All procedures for calculating permit limits are discussed in Sections 3.1.1 and 3.1.2 (pages 3-1 to 3-9) of EPA's Guidance Document for Ocean Dumping Permit (January 30, 1988).

    a. The mean and standard deviation of each physical or chemical parameter were calculated by the following equations:

$$\text{Mean}_x = \frac{\Sigma\, x_i}{N}$$

x_i = each value for the ith constituent
N = the number of data points reported

$$\text{Standard Deviation}_x = \frac{\Sigma\, \{x_i - \text{Mean}_x\}^2}{N - 1}$$

b. The permit limit (Upper Limit) was determined by taking the mean and adding the product of a constant multiplied by the standard deviation.

$\text{Upper Limit}_x = \text{Mean}_x + (k \times \text{Standard Deviation}_x)$

k = a constant from Table 3-2 in EPA's 1988 Guidance Document.

c. The constant (k) is based on N and two variables, probability (Γ) and proportion (P), used to compute permit limits. In this case, all limits were calculated with gamma = 0.95 and P = 0.95.

IV. FACTORS CONSIDERED IN REACHING THE PERMIT DECISIONS

A. Overview of Disposal Operations

The two fish canneries in American Samoa, StarKist Samoa and VCS Samoa Packing Company, propose to dispose of fish processing wastes at an ocean dump site centered approximately 5.45 nautical miles south of Tutuila Island in 1,502 fathoms of water. The center coordinates of the site are: 14° 24.00' South latitude by 170° 38.20' West longitude. The fish processing wastes will be transported to the upcurrent quadrant of the site and discharged at a rate less than or equal to 1,400 gallons per minute, depending on the season, at a maximum speed of 10 knots (see Special Condition 4.4.1). The disposal vessel will discharge the fish processing wastes along an oval-shaped track with the center axis of the oval perpendicular to the current direction. All disposal will occur within the boundary of the designated ocean disposal site.

On each trip, the master of the disposal vessel will document current direction at the center of the disposal site. He will then proceed to a point 1.1 nautical miles upcurrent of the prevailing surface current to discharge the waste. The fish processing wastes may be discharged only after this procedure has been conducted. This will ensure that the waste plume has an adequate area for mixing within the disposal site boundary.

Receiving waters at the disposal site are outside the American Samoa territorial sea. Though the ocean disposal site is outside these waters, the MPRSA § 102 special permits are designed to comply with oceanic water quality standards defined in § 24.0207(g)(1-7) of the American Samoa Water Quality Standards (see Table 1 under General Condition 1.5). This

will ensure that oceanic waters inside American Samoa's territorial sea are not affected by the ocean disposal operations. Four hours after dumping has ceased, concentrations of the fish processing wastes must reach ambient levels (40 C.F.R. section 227.29) at the disposal site boundary. Disposal site monitoring requirements are contained in the special permits. EPA Region IX will evaluate potential impacts to water quality based on the site monitoring reports.

B. Changes from the Previous MPRSA § 102 Special Permits

1. A new ocean disposal vessel will be authorized for the 1993 special permits (see page 1 of each permit). The MV ASTRO will be replaced by the FV TASMAN SEA (formerly the FV BLUE NORTH). The new disposal vessel is owned by Blue North Fisheries, Inc., at 1130 N.W. 45th Street, Seattle, WA 98107-4626.

2. EPA Region IX reviewed 29-30 months of waste stream monitoring data submitted by each permittee. The characteristics of the waste streams at the two canneries are entirely different; therefore, separate permits were necessary. Appendix A of this fact sheet contains the tables used to calculate the new permit limits for each permittee's waste stream defined in Section III.B above. The last part of each table shows the numerical changes from the previous special permits compared to the proposed special permits.

    a. In general, most of the limits for StarKist Samoa's waste stream were reduced (see Appendix A, Tables 1-3). Some limits were reduced as much as 90%. The only exceptions are: Cooker Juice oil and grease (+145%), Press Liquor total solids (+21%), Press Liquor total phosphorus (+59%), and Press Liquor oil and grease (+80%). These increases in the waste stream limits are required because earlier waste stream data do not reflect the present waste stream characteristics.

    b. Similarly, most of the limits for VCS Samoa Packing's waste streams were reduced (see Appendix A, Tables 4-6). Some limits were reduced as much as 85%. The only exceptions are: DAF Sludge total nitrogen (+46%), DAF Sludge oil and grease (+40%), DAF Sludge total volatile solids (+48%), DAF Sludge ammonia (+35%), Precooker Water 5-day biological oxygen demand (+7%), Press Water total nitrogen (+10%) and Press Water total volatile solids (+6%). These increases in the waste stream limits are required because earlier waste stream data did not properly characterize these waste streams.

3. Reports analyzing metal and petroleum hydrocarbon concentrations in the waste streams were submitted by StarKist Samoa (July 29, 1993) and VCS Samoa Packing (July 31, 1993). These reports were required under Special Condition 3.3.5 in the previous MPRSA § 102 special permits. EPA Region IX reviewed the permittees' analyses of metal and petroleum hydrocarbon concentrations and the permittees' explanation of the sources. The reports document low concentrations of metals and petroleum hydrocarbons for each waste stream.

EPA Region IX reviewed data submitted with the last 29-30 months of reports and we found low concentrations of metals in the waste streams. Table 4 below displays the mean and standard deviation for the concentrations listed in the tables of Appendix A. High values of aluminum in the DAF Sludge are expected because aluminum sulfate is added as an odor reducing agent. The high values for petroleum hydrocarbons are most likely a result of interference in the analysis by high concentrations of fish oils.

Table 4. Concentrations of Metals and Total Recoverable Petroleum Hydrocarbons in StarKist Samoa (SK) and VCS Samoa Packing (VCS) Waste Streams Reported for MPRSA § 102 Permits OD 90-01 and OD 90-02.

DAF	Al (mg/L)	Cr (mg/L)	Ni (mg/L)	Cu (mg/L	Pb (mg/L)	Cd (mg/L)	Hg (mg/L)	TRPH (mg/L)
SK Mean	473.00	0.88	0.74	4.70	0.95	0.24	0.009	1924.00
SK SD	336.00	0.42	0.40	2.78	0.74	0.13	0.006	841.00
VCS Mean	86.00	2.10	2.06	6.08	2.81	0.86	0.016	13393.00
VCS SD	59.00	1.14	1.71	3.26	1.96	0.61	0.010	9339.00
CJ - PC								
SK Mean	1.12	0.12	0.26	0.37	0.17	0.20	0.006	64.00
SK SD	0.90	0.06	0.22	0.11	0.14	0.06	0.002	26.00
VCS Mean	1.02	0.13	0.25	0.29	0.23	0.19	0.004	119.00
VCS SD	0.67	0.05	0.21	0.13	0.24	0.10	0.002	94.00
PL - PW								
SK Mean	1.81	0.15	0.32	.090	0.23	0.49	0.017	961.00
SK SD	1.12	0.07	0.24	0.37	0.22	0.22	0.008	531.00
VCS Mean	0.95	0.17	0.29	0.49	0.28	0.21	0.006	2471.00
VCS SD	0.57	0.10	0.24	0.18	0.24	0.09	0.002	2478.00

DAF = Dissolved Air Flotation Sludge
CJ - PC = StarKist Samoa Cooker Juice and VCS Samoa Packing Precooker Water
PL - PW = StarKist Samoa Press Liquor and VCS Samoa Packing Press Water
SD = Standard Deviation

EPA Region IX determined that these levels do not pose a significant risk to the marine environment or human health based on the design of disposal operations and dilution at the disposal site. Therefore, requirements to analyze metals and petroleum hydrocarbons in the permittees' waste streams have been deleted from the new permits.

4. Two new data reporting forms were developed for the 1993 ocean dumping permits (see Appendix B of each permit). These forms, and data submitted on a computer diskette compatible with EPA Region IX's computer system, will streamline the 6-month data reporting requirements.

5. The canneries must conduct confirmatory suspended particulate phase bioassays within one year of the effective date of the permit (see Special Condition 3.3.5). These tests are required because the nature of the fish processing wastes has changed from the initial characterization of the waste streams conducted more than 5 years ago. Results of the new bioassays will be used to calculate new Limiting Permissible Concentration (LPC) values. The new LPC values will be used to rerun the plume model used to predict dilution and discharge rates at the ocean disposal site. A report will be prepared by each permittee discussing the test procedures and results of the bioassay tests and new model runs. EPA Region IX will review the report to determine whether any changes in the ocean dumping permits are necessary.

6. A computerized navigation system is specified in Special Condition 4.3.4 and 4.5 to simplify plotting of the disposal vessel's track once inside the ocean disposal site and during disposal operations. This system will provide a continuous plot of the disposal vessel's track and a hard copy of each plot will be sent with the 6-month report.

V. EPA'S AUTHORITY TO ISSUE OCEAN DUMPING PERMITS

A. EPA's authority to issue special ocean dumping permits is defined under Title I of MPRSA and at 40 C.F.R. § 220.4. The authority to issue special permits was delegated to the Regional Administrator on January 11, 1977 (42 FR 2462). The Regional Administrator's authority to issue special permits was redelegated to the EPA Region IX Water Division Director on January 25, 1982 (EPA Region IX Order R1250.5A).

B. Section 102 of MPRSA authorizes EPA to issue permits for ocean dumping. The Agency must determine that the proposed dumping will not unreasonably degrade or endanger human health, welfare, or amenities, or the marine environment, ecological systems, or economic potentialities. In addition to these requirements, EPA must evaluate each permit application to determine whether the dumping will comply with the criteria at 40 C.F.R. Part 227 and whether the designated site complies with the criteria at 40 C.F.R. Part 228.

C. The American Samoa Fish Processing Waste disposal site was designated, through the publication of a Final Rule, on February 6, 1990 (55 FR 3948) at 40 C.F.R. § 228.12(b)(74). The designation process consisted of publication of an environmental impact statement (EIS) according to EPA's voluntary EIS policy. The draft EIS for this project was published on September 16, 1988 (53 FR 38118) and a final EIS was published on March 3, 1989 (54 FR 9083). The final rule designating the ocean disposal site was published on February 6, 1990 (55 FR 3948).

D. EPA Region IX will periodically evaluate the special permits to determine whether the fish canneries disposal operations comply with the special permit conditions. If unacceptable impacts are detected at the site (40 C.F.R. section 228.10), or significant permit violations are found, EPA will determine whether use of the site should be restricted (40 C.F.R. sections 228.10 and 228.11), or whether enforcement actions should be initiated under MPRSA § 105.

VI. ADMINISTRATIVE PROCEDURES AND THE PUBLIC HEARING PROCESS

A. The processing of an ocean dumping permit consists of the following actions:

1. EPA receives a completed application (40 C.F.R. § 221).

2. EPA issues a tentative decision whether to grant or deny the special permit (40 C.F.R. § 222.2). A draft permit is the means by which EPA documents the intent to grant an ocean dumping permit.

3. A public notice is issued to announce EPA's intent to issue the permit (40 C.F.R. § 222.3). The notice contains the following elements: summary, tentative determination, factors considered in reaching the tentative determination, hearing process, and the location of all information on the draft permit. Public notices describing EPA's intent to issue a permit are published in a daily newspaper in closest proximity to the proposed dump site and in a daily newspaper in the city in which EPA's Regional Office is located.

4. Before a final decision can be made on the special permit, formal consultation must be documented with the following agencies: American Samoa Government, U.S. Army Corps of Engineers, U.S. Coast Guard, National Marine Fisheries Service, U.S. Fish and Wildlife Service and the Shellfish Sanitation Branch of the Food and Drug Administration.

B. Initiation of a Public Hearing

1. Within 30 days of the date of the public notice, any person may request a public hearing to consider issuance or denial of the special permit or conditions to be imposed upon this permit. Any request for a hearing must be made in writing; must identify the person requesting the hearing; and must clearly state any objections to issuance or denial of the permit or to the conditions to be imposed upon the permit, and the issues to be considered at the hearing. According to 40 C.F.R. § 222.4, the Regional Administrator may schedule a hearing, at his discretion, based on genuine issues presented in the written request.

2. Upon receipt of a written request presenting genuine issues amenable to resolution by a public hearing, the Regional Administrator may determine a time and place for the hearing and publish a notice of the hearing. All interested parties will be invited to express their views on the proposed

issuance or denial of the permit at the hearing if one is held. If a request for a public hearing is made within 30 days of the date of this notice and does not meet the above criteria, the Regional Administrator must advise the requesting person of his decision to deny the hearing in writing and proceed to rule on the application.

3. Following adjournment of the public hearing, the Presiding Officer, appointed by the Regional Administrator, prepares written recommendations about the issuance, denial or conditions to be imposed upon the permit after full consideration of the views and arguments expressed at the hearing (40 C.F.R. §§ 222.6 through 222.8). The Presiding Officer's recommendations and the record of the hearing are forwarded to the Regional Administrator within 30 days of the hearing.

4. The Regional Administrator makes a determination whether to issue, deny or impose conditions on the permit within 30 days of receipt of the Presiding Officer's recommendations. He must give written notice of the decision to any person appearing at the public hearing (40 C.F.R. § 222.9).

5. A final permit becomes effective 10 days after issuance, if no requests for an adjudicatory hearing are received. Requests for an adjudicatory hearing may be made to the Regional Administrator within 10 days of receipt of the notice to issue or deny the permit (40 C.F.R. § 222.10 and § 222.11). An appeal of the Regional Administrator's adjudicatory hearing decision may be made in writing to the Administrator of EPA within 10 days following receipt of the Regional Administrator's determination on the need for an adjudicatory hearing (40 C.F.R. § 222.12).

VII. ADDITIONAL INFORMATION

For further information on the special permits, requests for copies of the permits or questions pertaining to MPRSA regulations, please contact either of the following people at EPA Region IX:

Janet Y. Hashimoto, Chief
Marine Protection Section (W-7-1)
U.S. Environmental Protection Agency
75 Hawthorne Street
San Francisco, California 94105-3901
(415) 744-1156

Patricia Young
Office of Pacific Island and Native American Programs (E-4)
U.S. Environmental Protection Agency
75 Hawthorne Street
San Francisco, California 94105-3901
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APPENDIX A

FACT SHEET

WASTE STREAM DATA
FROM STARKIST SAMOA AND VCS SAMOA PACKING

Table 1. StarKist Samoa DAF Sludge Data from August 1990 to January 1993 under OD 90-01.

Month	Total Solids (mg/L)	5-Day Biological Oxygen Demand (mg/L)	Total Phosphorus (mg/L)	Total Nitrogen (mg/L)	Oil and Grease (mg/L)	pH (pH units)	Total Volatile Solids (mg/L)	Density (g/mL)	Ammonia (mg/L)
AUG 1990	113,000	172,000	1,018	*21,000	39,000	5.55	87,000	1.04	1,800
SEP 1990	117,000	135,000	1,468	6,600	32,000	5.66	90,000	1.02	*5,485
OCT 1990	44,000	121,500	527	2,100	13,000	6.07	23,000	1.03	*3,200
NOV 1990	60,000	73,500	1,513	500	24,000	5.75	34,000	1.02	247
DEC 1990	118,000	62,000	950	2,567	59,000	6.39	88,000	1.00	2,120
JAN 1991	176,500	136,500	610	3,983	48,000	6.37	150,500	1.01	1,543
FEB 1991	52,000	28,500	285	2,900	8,500	5.85	30,000	1.01	1,800
MAR 1991	121,000	175,500	1,370	4,400	25,000	5.57	93,000	1.03	670
APR 1991	61,000	242,750	547	2,400	17,000	5.72	37,000	1.02	923
MAY 1991	163,000	183,000	1,080	7,600	65,000	5.51	139,000	1.02	747
JUN 1991	77,000	137,500	820	2,840	14,000	6.28	56,000	1.02	300
JUL 1991	87,000	174,500	900	4,200	20,000	5.82	65,000	1.02	580
AUG 1991	74,000	174,500	493	6,100	18,000	5.95	53,000	1.00	530
SEP 1991	122,000	208,000	660	3,900	59,000	5.73	100,000	1.03	630
OCT 1991	64,000	68,400	840	3,040	23,500	5.90	44,000	1.02	500
NOV 1991	95,000	50,087	904	3,250	14,000	6.12	74,000	1.04	390
DEC 1991	99,000	28,333	865	2,420	9,000	5.68	49,000	1.02	364
JAN 1992	55,000	78,634	570	1,780	11,400	5.85	30,000	1.01	190
FEB 1992	48,600	14,751	593	1,600	11,000	6.01	29,000	1.02	222
MAR 1992	41,000	40,262	213	630	9,400	5.80	26,000	1.00	170
APR 1992	115,000	119,225	480	580	33,100	5.72	101,000	0.97	472
MAY 1992	35,000	54,097	460	1,350	11,000	6.60	22,000	0.98	440
JUN 1992	91,000	74,725	1,370	3,420	39,600	6.11	77,000	0.98	357
JUL 1992	59,500	101,883	700	5,850	19,600	5.95	35,600	0.97	880
AUG 1992	48,000	48,500	750	1,640	12,500	5.64	38,000	1.02	110
SEP 1992	52,100	59,054	1,180	3,000	14,000	5.90	35,500	1.01	500

Month	Total Solids (mg/L)	5-Day Biological Oxygen Demand (mg/L)	Total Phosphorus (mg/L)	Total Nitrogen (mg/L)	Oil and Grease (mg/L)	pH (pH units)	Total Volatile Solids (mg/L)	Density (g/mL)	Ammonia (mg/L)
OCT 1992	110,000	56,074	1,670	4,800	24,000	6.12	82,000	0.93	927
NOV 1992	106,000	64,348	660	2,300	64,300	5.63	84,700	0.99	490
DEC 1992	91,300	58,193	990	1,830	30,100	5.68	62,100	1.03	240
JAN 1993	71,100	60,319	570	3,000	23,100	5.73	47,000	1.05	250
Maximum	176,500	242,750	1,670	7,600	65,000	6.6	150,500	1.05	2,120
Minimum	35,000	14,751	213	500	8,500	5.5	22,000	0.97	110
Number	30	30	30	29	30	30	30	29	28
Mean	85,570	100,055	835	3,123	26,370	5.9	62,747	1.01	657
Std. Dev.	35,073	59,579	364	1,756	16,996	0.3	33,077	0.02	526
Outlier +	190,788	278,791	1,928	8,391	77,358	6.7	161,977	1.07	2,235
Outlier -	-19,648	-78,682	-257	-2,144	-24,618	5.1	-36,483	0.95	-921
DAF Sludge Data With Outliers Removed and Recommended Permit Limits									
Number	30	30	30	29	30	30	30	29	28
Mean	85,570	100,055	835	3,123	26,370	5.9	62,747	1.01	657
Std. Dev.	35,073	59,579	364	1,756	16,996	0.3	33,077	0.02	526
Upper Limit	163,432	232,319	1,644	7,021	64,101	5.3	136,177	1.06	1,825
Lower Limit						6.5		0.97	
Rounded Limit	163,430	232,320	1,640	7,020	64,100		136,180		1,830
MPRSA Section 102 Special Permit #OD 90-01 DAF Sludge Limits									
Upper Limit	230,460	376,520	3,050	18,100	129,590	5.5	182,210	1.07	7,500
Lower Limit						7.0		0.92	
Changes in DAF Sludge Limits from OD 90-01 to OD 93-01									
Upper Limit	-67,030	-144,200	-1,410	-11,080	-65,490	-0.2	-46,030	-0.01	-5,670
Percent Change	-29	-38	-46	-61	-51	-4	-25	-1	-76
Lower Limit						-0.5		0.05	
Percent Change						-7		5	

* = Violation of MPRSA § 102 Permit #OD 90-01, NA = Not Available, Underlined Value = Outlier not included in limit calculations.

Table 2. StarKist Samoa Cooker Juice Data from August 1990 to January 1993 under OD 90-01.

Month	Total Solids (mg/L)	5-Day Biological Oxygen Demand (mg/L)	Total Phosphorus (mg/L)	Total Nitrogen (mg/L)	Oil and Grease (mg/L)	pH (pH units)	Total Volatile Solids (mg/L)	Density (g/mL)	Ammonia (mg/L)
AUG 1990	58,000	98,000	647	5,200	600	6.09	42,000	1.02	3,865
SEP 1990	34,000	107,500	430	4,000	2,500	6.26	25,000	1.00	1,695
OCT 1990	56,000	69,000	530	4,300	960	6.30	41,000	1.02	3,850
NOV 1990	66,000	56,000	824	4,700	1,300	5.98	49,000	1.03	238
DEC 1990	42,000	47,000	802	4,300	500	6.08	28,000	1.00	406
JAN 1991	43,500	64,500	293	3,251	2,990	6.05	30,500	1.01	236
FEB 1991	31,000	25,500	360	2,200	610	5.92	20,000	1.01	130
MAR 1991	56,000	158,000	590	5,200	410	6.04	38,000	1.02	215
APR 1991	55,000	198,250	616	4,900	2,200	6.16	37,000	1.02	761
MAY 1991	60,000	171,500	785	5,930	350	6.12	40,000	1.01	139
JUN 1991	56,000	111,250	580	5,110	690	6.32	39,000	1.02	260
JUL 1991	43,000	152,000	520	3,400	2,200	6.19	30,000	1.01	270
AUG 1991	74,500	165,000	632	6,100	4,300	6.02	51,000	0.99	295
SEP 1991	79,000	137,500	810	5,200	1,400	6.07	51,000	1.06	326
OCT 1991	129,000	85,050	500	6,270	*12,600	5.98	102,000	1.03	270
NOV 1991	48,000	35,541	541	3,280	2,300	6.11	33,000	1.01	170
DEC 1991	79,000	35,333	728	5,080	*13,400	5.98	56,000	1.02	262
JAN 1992	88,000	86,186	710	5,900	2,100	6.08	56,000	1.04	300
FEB 1992	57,000	39,837	594	4,600	*6,800	6.26	35,000	1.02	762
MAR 1992	63,000	45,016	585	4,480	2,600	6.06	44,000	1.03	380
APR 1992	72,200	54,947	690	5,900	*9,000	6.06	53,500	1.00	350
MAY 1992	68,000	44,799	680	5,900	4,000	6.14	48,000	1.02	220
JUN 1992	58,000	43,429	457	5,330	93	6.07	34,000	1.03	348
JUL 1992	76,800	60,002	540	6,390	*12,600	6.01	55,500	1.03	220
AUG 1992	71,000	50,346	830	6,460	2,820	5.86	44,000	0.98	440
SEP 1992	61,500	43,628	650	6,480	790	6.12	50,600	0.99	220

Month	Total Solids (mg/L)	5-Day Biological Oxygen Demand (mg/L)	Total Phosphorus (mg/L)	Total Nitrogen (mg/L)	Oil and Grease (mg/L)	pH (pH units)	Total Volatile Solids (mg/L)	Density (g/mL)	Ammonia (mg/L)
OCT 1992	62,000	47,067	756	5,600	1,700	6.21	42,000	1.06	228
NOV 1992	78,200	35,976	640	9,500	2,010	6.10	53,900	1.04	690
DEC 1992	72,000	47,263	860	6,630	340	5.98	41,300	1.01	190
JAN 1993	131,000	56,181	690	6,100	*23,000	6.05	103,000	1.01	300
Maximum	131,000	198,250	860	6,630	13,400	6.3	56,000	1.06	762
Minimum	31,000	25,500	293	2,200	340	5.9	20,000	0.98	130
Number	30	30	30	29	28	30	28	30	27
n	65,623	79,053	629	5,110	3,360	6.1	41,725	1.02	319
Std. Dev.	21,870	47,792	139	1,105	3,808	0.1	9,765	0.02	165
Outlier +	131,232	222,429	1,045	8,426	14,784	6.4	71,019	1.07	816
Outlier -	14	-64,322	213	1,794	-8,065	5.8	12,431	0.96	-177
Cooker Juice Data With Outliers Removed and Recommended Permit Limits									
Number	30	30	30	29	28	30	28	30	27
Mean	65,623	79,053	629	5,110	3,360	6.1	41,725	1.02	319
Std. Dev.	21,870	47,792	139	1,105	3,808	0.1	9,765	0.02	165
Upper Limit	114,174	185,151	937	7,564	11,814	5.9	63,402	1.06	687
Lower Limit						6.3		0.98	
Rounded Limit	114,180	185,150	940	7,560	11,810		63,400		690
MPRSA Section 102 Special Permit #OD 90-01 Cooker Juice Limits									
Upper Limit	158,290	365,450	1,150	21,380	4,830	5.5	146,900	1.06	21,200
Lower Limit						7.0		0.97	
Changes in Cooker Juice Limits from OD 90-01 to OD 93-01									
Upper Limit	-44,110	-180,300	-210	-13,820	6,980	0.4	-83,500	0.00	-20,510
Percent Change	-28	-49	-18	-65	145	6	-57	0	-97
Lower Limit						-0.7		0.01	
Percent Change						-10		1	

* = Violation of MPRSA § 102 Permit #OD 90-01, NA = Not Available, Underlined Value = Outlier not included in limit calculations.

Table 3. StarKist Samoa Press Liquor Data from August 1990 to January 1993 under OD 90-01.

Month	Total Solids (mg/L)	5-Day Biological Oxygen Demand (mg/L)	Total Phosphorus (mg/L)	Total Nitrogen (mg/L)	Oil and Grease (mg/L)	pH (pH units)	Total Volatile Solids (mg/L)	Density (g/mL)	Ammonia (mg/L)
AUG 1990	245,000	164,000	*2,030	23,000	50,000	5.93	221,000	1.04	9,300
SEP 1990	260,000	189,000	*2,242	12,400	*120,000	6.08	244,000	1.03	3,845
OCT 1990	245,000	157,500	654	10,000	*83,000	6.28	230,000	0.94	3,050
NOV 1990	200,000	158,500	1,105	8,800	*89,000	6.25	180,000	1.03	360
DEC 1990	205,000	143,000	1,257	9,650	54,000	6.28	184,000	1.04	565
JAN 1991	207,000	161,500	648	14,487	50,500	6.16	187,000	1.02	360
FEB 1991	190,000	138,000	1,850	11,000	40,000	6.22	165,000	1.06	280
MAR 1991	250,000	241,000	1,590	10,600	60,000	6.03	231,000	1.05	350
APR 1991	210,000	327,375	1,120	13,900	*72,000	6.15	185,000	1.02	943
MAY 1991	231,000	76,500	*2,430	13,000	*63,000	6.10	201,000	1.02	1,030
JUN 1991	178,000	270,500	1,540	10,200	45,000	6.21	159,000	1.01	510
JUL 1991	242,000	183,000	*2,200	11,400	41,000	6.34	216,000	1.07	800
AUG 1991	146,000	212,000	1,000	10,500	32,000	6.11	129,000	0.97	325
SEP 1991	155,000	230,500	1,300	7,400	38,000	5.95	127,000	1.04	495
OCT 1991	149,000	137,200	1,470	10,700	28,100	5.99	121,000	1.00	530
NOV 1991	76,000	73,928	800	6,000	8,400	6.08	54,000	1.03	280
DEC 1991	240,000	116,033	*2,180	14,100	43,800	5.95	212,000	1.02	503
JAN 1992	237,000	287,080	1,900	12,600	43,000	6.25	206,000	1.04	890
FEB 1992	224,000	131,039	1,660	11,600	47,000	6.22	203,000	1.04	782
MAR 1992	271,000	189,000	*3,620	13,600	*53,000	6.45	229,000	1.03	1,490
APR 1992	256,000	220,167	1,600	14,100	*80,400	6.30	232,000	1.04	1,160
MAY 1992	*288,000	253,917	1,600	13,000	*114,500	6.13	224,000	1.06	370
JUN 1992	198,000	256,800	1,350	13,600	50,500	6.19	172,000	1.04	247
JUL 1992	116,000	124,542	760	9,160	30,600	6.02	90,300	1.02	240
AUG 1992	190,000	159,667	1,940	13,700	*91,000	5.95	122,000	1.03	520
SEP 1992	203,000	189,933	1,490	17,800	52,700	6.26	179,000	1.01	660

Month	Total Solids (mg/L)	5-Day Biological Oxygen Demand (mg/L)	Total Phosphorus (mg/L)	Total Nitrogen (mg/L)	Oil and Grease (mg/L)	pH (pH units)	Total Volatile Solids (mg/L)	Density (g/mL)	Ammonia (mg/L)
OCT 1992	49,000	133,347	633	5,200	18,000	6.52	37,000	1.04	1,080
NOV 1992	171,000	142,510	1,070	6,700	*75,500	6.08	152,000	1.02	1,160
DEC 1992	268,000	163,470	*3,100	19,200	49,500	5.95	217,000	1.05	1,000
JAN 1993	240,000	157,000	*2,300	15,300	59,900	6.18	192,000	1.06	550
Maximum	288,000	327,375	3,620	23,000	120,000	6.5	244,000	1.07	1,490
Minimum	49,000	73,928	633	5,200	8,400	5.9	37,000	0.97	240
Number	30	30	30	30	30	30	30	29	27
n	204,667	179,600	1,615	12,090	56,113	6.2	176,710	1.03	647
Std. Dev.	55,497	59,096	697	3,725	25,212	0.1	52,059	0.02	335
Outlier +	371,159	356,887	3,705	23,265	131,750	6.6	332,887	1.09	1,651
Outlier -	38,175	2,314	-476	915	-19,523	5.7	20,533	0.97	-356
Press Liquor Data With Outliers Removed and Recommended Permit Limits									
Number	30	30	30	30	30	30	30	29	27
Mean	204,667	179,600	1,615	12,090	56,113	6.2	176,710	1.03	647
Std. Dev.	55,497	59,096	697	3,725	25,212	0.1	52,059	0.02	335
Upper Limit	327,871	310,792	3,162	20,359	112,084	5.8	292,281	1.08	1,390
Lower Limit						6.5		0.99	
Rounded Limit	327,870	310,790	3,160	20,360	112,080		292,280		1,390
MPRSA Section 102 Special Permit #OD 90-01 Press Liquor Limits									
Upper Limit	271,920	399,090	1,990	31,550	62,150	5.5	385,630	1.07	21,170
Lower Limit						7.0		0.96	
Changes in Press Liquor Limits from OD 90-01 to OD 93-01									
Upper Limit	55,950	-88,300	1,170	-11,190	49,930	0.3	-93,350	0.01	-19,780
Percent Change	21	-22	59	-35	80	6	-24	1	-93
Lower Limit						-0.5		0.03	
Percent Change						-7		3	

* = Violation of MPRSA § 102 Permit #OD 90-01, NA = Not Available, Underlined Value = Outlier not included in limit calculations.

Table 4. VCS Samoa Packing DAF Sludge Data from August 1990 to December 1992 under OD 90-02.

Month	Total Solids (mg/L)	5-Day Biological Oxygen Demand (mg/L)	Total Phosphorus (mg/L)	Total Nitrogen (mg/L)	Oil and Grease (mg/L)	Total Volatile Solids (mg/L)	Density (g/mL)	Ammonia (mg/L)	pH (pH units)
AUG 1990	140,000	140,000	2,050	6,800	11,500	130,000	0.97	*3,050	6.8
SEP 1990	41,500	97,000	405	4,900	20,000	30,000	1.02	*3,650	6.8
OCT 1990	142,000	286,000	820	7,900	108,000	129,000	0.99	*2,800	6.9
NOV 1990	150,000	96,000	770	2,900	39,000	141,000	0.87	310	*5.3
DEC 1990	168,000	NA	1,900	*15,400	60,000	158,000	0.98	1,600	6.3
JAN 1991	105,000	NA	3,350	NA	74,180	76,000	0.95	*3,000	6.2
FEB 1991	179,000	NA	2,300	8,400	89,480	161,000	0.98	990	5.8
MAR 1991	175,000	86,000	1,450	NA	22,775	162,000	1.01	1,650	6.1
APR 1991	395,000	NA	1,500	NA	263,150	*375,000	0.98	1,470	5.7
MAY 1991	228,000	139,000	*4,250	NA	99,115	215,000	0.98	1,850	5.7
JUN 1991	327,000	NA	1,950	8,400	205,270	306,000	0.98	590	*5.2
JUL 1991	349,000	246,000	750	6,272	126,000	*337,000	0.99	1,220	5.7
AUG 1991	236,000	132,000	1,150	1,344	51,000	219,000	0.96	1,000	5.5
SEP 1991	266,000	108,000	2,300	560	187,850	246,000	0.97	830	*5.2
OCT 1991	234,000	232,000	1,050	2,240	131,300	227,000	0.95	1,090	6.0
NOV 1991	258,000	NA	2,100	11,200	133,600	236,000	0.98	1,400	5.6
DEC 1991	432,000	NA	3,000	*19,600	280,000	*421,000	0.95	1,130	6.0
JAN 1992	254,100	221,000	2,700	8,400	*373,000	*414,000	0.93	190	*4.7
FEB 1992	315,400	200,000	300	3,150	*299,000	*360,000	0.91	1,440	5.5
MAR 1992	296,700	*518,000	*7,200	4,900	182,000	*336,000	0.99	580	5.7
APR 1992	222,100	2,220	1,800	*17,500	154,780	251,000	0.99	2,020	5.9
MAY 1992	231,000	*4,780,000	1,300	12,600	*350,440	281,000	0.94	930	5.9
JUN 1992	294,000	290,000	1,200	14,000	*428,160	280,000	0.88	463	5.5
JUL 1992	114,000	136,000	1,700	11,900	173,000	100,000	*0.83	670	5.6
AUG 1992	130,000	260,000	3,300	*19,600	3,700	95,000	0.98	1,810	5.8
SEP 1992	52,000	42,300	1,800	12,880	62,600	36,000	0.93	706	6.3

Month	Total Solids (mg/L)	5-Day Biological Oxygen Demand (mg/L)	Total Phosphorus (mg/L)	Total Nitrogen (mg/L)	Oil and Grease (mg/L)	Total Volatile Solids (mg/L)	Density (g/mL)	Ammonia (mg/L)	pH (pH units)
OCT 1992	159,000	182,800	1,000	6,720	173,600	148,000	0.92	640	5.9
NOV 1992	151,000	151,000	1,500	15,120	151,720	137,000	0.89	*3,300	6.3
DEC 1992	*494,000	38,700	1,200	10,640	99,320	44,500	0.97	730	6.2
Maximum	494,000	290,000	4,250	19,600	428,160	421,000	1.02	3,650	6.9
Minimum	41,500	2,220	300	560	3,700	30,000	0.83	190	4.7
Number	29	20	28	25	29	29	29	29	29
Mean	225,476	154,301	1,746	9,333	150,122	208,672	0.95	1,418	5.9
Dev.	106,449	81,405	921	5,448	110,620	111,212	0.04	924	0.5
Outlier +	544,824	398,516	4,508	25,676	481,981	542,307	1.08	4,189	7.3
Outlier -	-93,872	-89,914	-1,016	-7,010	-181,737	-124,962	0.82	-1,354	4.4
DAF Sludge Data With Outliers Removed and Recommended Permit Limits									
Number	29	20	28	25	29	29	29	29	29
Mean	225,476	154,301	1,746	9,333	150,122	208,672	0.95	1,418	5.9
Std. Dev.	106,449	81,405	921	5,448	110,620	111,212	0.04	924	0.5
Upper Limit	461,794	349,348	3,790	21,819	395,698	455,562	1.05	3,468	4.8
Lower Limit							0.86		7.0
Rounded Limit	461,790	349,350	3,790	21,820	395,700	455,560		3,470	
MPRSA Section 102 Special Permit #OD 90-02 DAF Sludge Limits									
Upper Limit	492,000	443,840	3,910	14,950	282,750	308,700	1.08	2,570	5.5
Lower Limit							0.85		7.0
Changes in DAF Sludge Limits from OD 90-02 to OD 93-02									
Upper Limit	-30,210	-94,490	-120	6,870	112,950	146,860	-0.03	900	-0.7
Percent Change	-6	-21	-3	46	40	48	-3	35	-13
Lower Limit							0.01		0
Percent Change							1		0

* = Violation of MPRSA § 102 Permit #OD 90-02, NA = Not Available, Underlined Value = Outlier not included in limit calculations.

Table 5. VCS Samoa Packing Precooker Water Data from August 1990 to December 1992 under OD 90-02.

Month	Total Solids (mg/L)	5-Day Biological Oxygen Demand (mg/L)	Total Phosphorus (mg/L)	Total Nitrogen (mg/L)	Oil and Grease (mg/L)	Total Volatile Solids (mg/L)	Density (g/mL)	Ammonia (mg/L)	pH (pH units)
AUG 1990	11,000	6,400	120	890	200	7,700	1.00	590	6.2
SEP 1990	91,000	40,000	970	8,300	7,300	73,000	1.03	780	6.2
OCT 1990	NA	NA	NA	NA	NA	NA	NA	NA	NA
NOV 1990	*435,000	58,000	460	2,700	34,000	*429,000	1.00	430	6.1
DEC 1990	73,000	NA	950	9,520	<200	50,000	1.03	130	6.1
JAN 1991	102,000	NA	1,100	4,480	23,771	76,000	1.03	260	6.0
FEB 1991	45,000	NA	1,300	5,600	2,866	28,000	0.95	90	6.2
MAR 1991	46,000	21,000	850	4,200	2,499	32,000	1.02	130	6.6
APR 1991	52,000	NA	950	4,340	5,229	35,000	1.04	135	5.9
MAY 1991	58,000	33,000	1,450	2,800	7,212	47,000	1.01	235	5.8
JUN 1991	83,000	NA	1,675	5,600	7,814	55,000	1.04	220	5.9
JUL 1991	95,000	37,000	1,025	1,820	3,000	69,000	1.03	200	5.9
AUG 1991	51,000	35,000	1,150	1,750	11,300	45,000	0.99	110	6.2
SEP 1991	62,000	30,000	575	2,240	48,630	53,000	1.04	110	6.1
OCT 1991	72,000	40,000	725	700	2,100	48,000	1.02	225	6.3
NOV 1991	65,000	33,000	900	6,020	7,800	50,000	0.99	120	6.4
DEC 1991	31,000	NA	1,250	3,500	7,800	24,000	0.99	1,380	6.0
JAN 1992	71,000	24,300	2,000	6,580	900	49,000	1.00	120	6.0
FEB 1992	50,000	19,300	300	3,150	2,600	39,000	0.97	156	6.7
MAR 1992	32,000	17,000	1,200	3,850	670	23,000	0.98	250	6.1
APR 1992	77,900	510	400	7,875	7,190	63,000	0.98	178	6.0
MAY 1992	59,000	*258,000	650	4,375	4,362	41,000	0.99	160	6.0
JUN 1992	34,000	19,300	850	5,250	3,318	22,000	0.98	90	6.3
JUL 1992	32,700	19,900	950	5,250	6,504	21,300	0.97	98	5.9
AUG 1992	67,000	42,000	1,000	7,980	*264,000	54,000	1.00	415	5.4
SEP 1992	81,000	58,200	900	9,660	2,640	47,000	0.99	293	5.9

Month	Total Solids (mg/L)	5-Day Biological Oxygen Demand (mg/L)	Total Phosphorus (mg/L)	Total Nitrogen (mg/L)	Oil and Grease (mg/L)	Total Volatile Solids (mg/L)	Density (g/mL)	Ammonia (mg/L)	pH (pH units)
OCT 1992	103,000	47,000	1,400	10,920	6,504	73,000	1.02	208	6.1
NOV 1992	97,000	30,900	1,000	13,300	3,490	65,600	1.00	325	6.2
DEC 1992	63,300	30,200	1,100	12,042	2,808	46,100	1.00	220	6.0
Maximum	103,000	58,200	2,000	13,300	11,300	76,000	1.04	430	6.7
Minimum	11,000	510	120	700	200	7,700	0.95	90	5.4
Number	27	21	28	28	24	27	28	25	28
Mean	63,144	30,572	971	5,525	4,429	45,804	1.00	196	6.1
Std. Dev.	23,438	14,373	396	3,289	2,898	17,408	0.02	92	0.2
Outlier +	133,460	73,691	2,161	15,392	13,123	98,028	1.07	474	6.8
Outlier -	-7,171	-12,547	-218	-4,343	-4,264	-6,421	0.93	-81	5.4
Precooker Water Data With Outliers Removed and Recommended Permit Limits									
Number	27	21	28	28	24	27	28	25	28
Mean	63,144	30,572	971	5,525	4,429	45,804	1.00	196	6.1
Std. Dev.	23,438	14,373	396	3,289	2,898	17,408	0.02	92	0.2
Upper Limit	115,178	64,651	1,851	12,827	11,178	84,450	1.06	408	5.5
Lower Limit							0.95		6.6
Rounded Limit	115,180	64,650	1,850	12,830	11,180	84,450		410	
MPRSA Section 102 Special Permit #OD 90-02 Precooker Water Limits									
Upper Limit	257,290	60,220	2,170	20,820	207,830	358,180	1.04	2,740	5.5
Lower Limit							0.96		7.0
Changes in Precooker Water Limits from OD 90-02 to OD 93-02									
Upper Limit	-142,110	4,430	-320	-7,990	-196,650	-273,730	0.02	-2,330	0
Percent Change	-55	7	-15	-38	-95	-76	1	-85	0
Lower Limit							-0.01		-0.4
Percent Change							-1		-5

* = Violation of MPRSA § 102 Permit #OD 90-02, NA = Not Available, Underlined Value = Outlier not included in limit calculations.

Table 6. VCS Samoa Packing Press Water Data from August 1990 to December 1992 under OD 90-02.

Month	Total Solids (mg/L)	5-Day Biological Oxygen Demand (mg/L)	Total Phosphorus (mg/L)	Total Nitrogen (mg/L)	Oil and Grease (mg/L)	Total Volatile Solids (mg/L)	Density (g/mL)	Ammonia (mg/L)	pH (mg/L)
AUG 1990	280,000	230,000	1,000	1,200	150,000	260,000	1.02	2,900	6.9
SEP 1990	193,000	NA	990	10,800	52,000	178,000	1.02	360	6.9
OCT 1990	NA	NA	NA	NA	NA	NA	NA	NA	NA
NOV 1990	216,000	109,000	1,290	9,700	53,000	200,000	1.00	400	6.0
DEC 1990	273,000	NA	1,250	*39,200	107,000	252,000	1.04	510	6.2
JAN 1991	286,000	NA	2,550	21,000	157,020	266,000	1.03	290	5.9
FEB 1991	128,000	172,000	900	4,760	42,130	111,000	1.00	240	6.1
MAR 1991	290,000	102,000	2,850	NA	57,350	270,000	1.04	440	6..
APR 1991	258,000	NA	1,350	12,600	86,580	229,000	1.02	452	5.8
MAY 1991	105,000	58,000	4,100	NA	22,315	89,000	1.01	875	6.0
JUN 1991	287,000	NA	1,800	23,800	132,010	260,000	1.04	350	5.8
JUL 1991	202,000	118,000	1,400	7,000	32,000	178,000	1.02	320	5.9
AUG 1991	235,000	165,000	1,950	4,200	41,000	214,000	*0.97	300	5.9
SEP 1991	282,000	185,000	1,650	3,920	143,410	262,000	1.06	270	6.0
OCT 1991	165,000	91,000	1,950	3,920	15,100	148,000	1.02	287	6.3
NOV 1991	163,000	NA	2,100	8,960	42,600	147,000	1.02	250	6.5
DEC 1991	41,000	NA	2,200	11,200	8,000	29,000	1.00	3,160	6.0
JAN 1992	269,000	163,000	3,000	23,240	93,000	251,000	1.00	760	6.2
FEB 1992	42,175	86,000	2,100	*35,200	68,000	140,000	1.00	382	6.2
MAR 1992	136,200	222,000	5,700	14,000	120,000	246,000	0.99	510	6.3
APR 1992	76,775	1,980	1,000	21,000	78,710	*448,000	1.00	265	6.1
MAY 1992	22,600	311,000	600	9,800	125,710	*395,000	*0.97	230	6.0
JUN 1992	355,000	300,000	1,000	17,500	54,550	339,000	0.99	503	6.2
JUL 1992	234,000	88,500	1,400	18,200	75,430	199,000	1.00	305	5.9
AUG 1992	166,000	340,000	1,500	14,000	242,000	95,000	0.99	580	5.5
SEP 1992	163,000	125,000	1,300	17,920	68,600	131,000	0.98	510	6.0

Month	Total Solids (mg/L)	5-Day Biological Oxygen Demand (mg/L)	Total Phosphorus (mg/L)	Total Nitrogen (mg/L)	Oil and Grease (mg/L)	Total Volatile Solids (mg/L)	Density (g/mL)	Ammonia (mg/L)	pH (mg/L)
OCT 1992	138,000	98,100	1,300	12,600	75,430	106,000	1.00	815	6.2
NOV 1992	229,000	179,000	1,200	17,080	39,640	201,000	0.99	239	6.1
DEC 1992	189,000	77,500	1,500	15,120	32,350	171,000	1.02	550	6.2
Maximum	355,000	340,000	3,000	39,200	157,020	448,000	1.06	875	6.9
Minimum	22,600	1,980	600	1,200	8,000	29,000	0.97	230	5.5
Number	28	21	26	26	27	28	28	26	28
Mean	193,741	153,432	1,582	14,535	73,072	207,679	1.01	423	6.1
Std. Dev.	84,581	85,668	596	8,973	41,795	90,827	0.02	177	0.3
Outlier +	447,484	410,436	3,369	41,455	198,457	480,159	1.07	953	7.0
Outlier -	-60,002	-103,571	-205	-12,384	-52,314	-64,802	0.94	-108	5.3
Press Water Data With Outliers Removed and Recommended Permit Limits									
Number	28	21	26	26	27	28	28	26	28
Mean	193,741	153,432	1,582	14,535	73,072	207,679	1.01	423	6.1
Std. Dev.	84,581	85,668	596	8,973	41,795	90,827	0.02	177	0.3
Upper Limit	381,511	356,551	2,947	35,102	165,857	409,314	1.06	828	5.5
Lower Limit							0.96		6.8
Round Limit	381,510	356,550	2,950	35,100	165,860	409,310		830	
MPRSA Section 102 Special Permit #OD 90-02 Press Water Limits									
Upper Limit	463,780	524,270	6,860	32,020	386,480	384,560	1.07	4,940	5.5
Lower Limit							0.98		7.0
Changes in Press Water Limits from OD 90-02 to OD 93-02									
Upper Limit	-82,270	-167,720	-3,910	3,080	-220,620	24,750	-0.01	-4,110	0
Percent Change	-18	-32	-57	10	-57	6	-1	-83	0
Lower Limit							-0.02		-0.2
Percent Change							-2		-3

* = Violation of MPRSA § 102 Permit #OD 90-02, NA = Not Available, Underlined Value = Outlier not included in limit calculations.

MARINE PROTECTION, RESEARCH AND SANCTUARIES ACT § 102
OCEAN DUMPING PERMIT

PERMIT NUMBER AND TYPE: OD 93-02 Special

EFFECTIVE DATE: July 31, 1993

EXPIRATION DATE: July 31, 1996

PERMITTEE:
VCS Samoa Packing Company, Inc.
P.O. Box 957
Pago Pago, American Samoa 96799

WASTE GENERATOR:
VCS Samoa Packing Company, Inc.
P.O. Box 957
Pago Pago, American Samoa 96799

WASTE GENERATED AT:
VCS Samoa Packing Company, Inc.
P.O. Box 957
Pago Pago, American Samoa 96799

PORT OF DEPARTURE: Pago Pago Harbor, American Samoa

WASTE TRANSPORTER:
FV TASMAN SEA
Blue North Fisheries, Inc.
1130 N.W. 45th Street
Seattle, Washington 98107-4626

A special ocean dumping permit is being issued to VCS Samoa Packing Company, Inc. because the Regional Administrator of EPA Region IX has determined that disposal of fish processing wastes off American Samoa meets EPA's ocean dumping criteria at 40 C.F.R. Parts 227 and 228. For this permit, the term "fish processing wastes" shall mean either dissolved air flotation (DAF) sludge, precooker water or press water generated at the permittee's plant in Pago Pago, American Samoa.

This special permit authorizes the transportation and dumping into ocean waters of fish processing wastes as described in the special conditions section pursuant to the Marine Protection, Research, and Sanctuaries Act (MPRSA) of 1972 (33 U.S.C. § 1401 *et seq.*) as amended (hereinafter referred to as "the Act"); regulations issued thereunder; and the terms and conditions stated below.

This MPRSA Special Permit does not contain any information collection requirements subject to Office of Management and Budget review under the Paper Work Reduction Act of 1980 (44 U.S.C. § 3501 *et seq.*). This determination has been made because the permit does not require data collection by more than 10 persons.

1. GENERAL CONDITIONS

1.1. Operation under this special ocean dumping permit shall conform to all applicable federal statutes and regulations including, but not limited to, the Act, the Ocean Dumping Ban Act of 1988 (P.L. 100-688), the Marine Plastic Pollution Research and Control Act of 1987 (P.L. 100-220), the Clean Water Act (33 U.S.C. § 1251 *et seq.*), and the Ports and Waterways Safety Act (33 U.S.C. § 1221 *et seq.*).

1.2. All transportation and dumping authorized herein shall be undertaken in a manner consistent with the terms and conditions of this permit. VCS Samoa Packing Company, Inc. (hereafter referred to as "the permittee") shall be liable for compliance with all such terms and conditions. The permittee shall be held liable under § 105 of the Act (33 U.S.C. § 1415) if any permit violations occur. During disposal operations when the permittee's fish processing wastes are combined with similar fish processing wastes from other permittees authorized to use the ocean disposal site defined in Special Condition 2.2, all companies shall be held individually liable under § 105 of the Act (33 U.S.C. § 1415) if a permit violation occurs.

1.3. Under § 105 of the Act, any person who violates any provision of the Act, 40 C.F.R. Parts 220 through 228 promulgated thereunder, or any term or condition of this permit shall be liable for a civil penalty of not more than $50,000 per day for each violation. Additionally, any knowing violation of the Act, 40 C.F.R. Parts 220 through 228, or the permit may result in a criminal action being brought with penalties of not more than $50,000 or one year in prison, or both. Violations of the Act or the terms and conditions of this permit include but are not limited to:

1.3.1. Transportation to, and dumping at any location other than that defined in Special Condition 2.2 of this permit;

1.3.2. Transportation and dumping of any material not identified in this permit, more frequently than authorized in this permit, or more than the quantities identified in this permit, unless specifically authorized by a written modification hereto;

1.3.3. Failure to conduct permit monitoring as required in Special Conditions 3.1, 3.3.1, 4.7 and 5.1; or

1.3.4. Failure to file fish processing waste stream reports and disposal site monitoring reports as required in Special Conditions 3.3, 4.7, 5.2 and 5.3.

1.4. Nothing contained herein shall be deemed to authorize, in any way, the transportation from the United States for the purpose of dumping into the ocean waters, the territorial sea, or the contiguous zone, the following materials:

1.4.1. High-level radioactive wastes;

1.4.2. Materials, in whatever form, produced for radiological, chemical, or biological warfare;

1.4.3. Persistent synthetic or natural materials which may float or remain in suspension in the ocean; or

1.4.4. Medical wastes as defined in § 3(k) of the Act.

1.4.5. Flotables, garbage, domestic trash, waste chemicals, solid waste, or any materials prohibited by the Ocean Dumping Ban Act or the Marine Plastic Pollution Research and Control Act.

1.5. Nothing contained herein shall be deemed to authorize, in any way, violation of applicable American Samoa Water Quality Standards. The following water quality standards apply:

Table 1. 1989 American Samoa Water Quality Standards: Oceanic Waters [§24.0207(g)(1-7)].

Parameter	Median Not to Exceed the Given Value
Turbidity	0.20 NTU
Total Phosphorus	11.0 µg-P/L
Total Nitrogen	115.0 µg-N/L
Chlorophyll *a*	0.18 µg/L
Light Penetration Depth	150 feet, to exceed the given value 50% of the time.
Dissolved Oxygen	Not less than 80% of saturation or less than 5.5 mg/L. If the natural level of dissolved oxygen is less than 5.5 mg/L, then the natural dissolved oxygen level shall become the standard.
pH	The pH range shall be 6.5 to 8.6 pH units and within 0.2 pH units of the level which occurs naturally.

1.6. After notice and opportunity for a hearing, this permit may be revised, revoked or limited, in whole or in part, subject only to the provisions of 40 C.F.R. §§ 222.3(b) through 222.3(h) and 40 C.F.R. § 223.2, as a result of a determination by the Regional Administrator of EPA that:

1.6.1. The cumulative impact of the permittee's dumping activities or the aggregate impact of all dumping activities in the dump site designated in Special Condition 2.2 should be categorized as Impact Category I, as defined in 40 C.F.R. § 228.10(c)(1);

1.6.2. There has been a change in circumstances about the management of the disposal site designated in Special Condition 2.2;

1.6.3. The dumping authorized by the permit would violate applicable American Samoa Water Quality Standards;

1.6.4. The dumping authorized can no longer be carried out consistent with the criteria defined at 40 C.F.R. Parts 227 and 228;

1.6.5. The permittee violated any term or condition of the permit;

1.6.6. The permittee misrepresented, or did not disclose all relevant facts in the permit application accurately; or

1.6.7. The permittee did not keep records, engage in monitoring and reporting activities, or to notify appropriate officials in a timely manner of the transportation and dumping activities as specified in any condition of this permit.

1.7. The permittee shall ensure always that facilities, including any vessels associated with the permit, are in good working order to achieve compliance with the terms and conditions of this permit. During all transportation and loading operations, there shall not be a loss of fish processing wastes to any waterway or during transport to the disposal site.

1.8. Any change in the designated fish processing waste transporter may be made at the discretion of the Regional Administrator or his delegate. A written request for such a transfer shall be made by the permittee at least thirty (30) days before the requested transfer date. Written approval by the EPA Regional Administrator must be obtained before such a transfer occurs.

1.9. The permittee shall allow the EPA Regional Administrator, the Commander of the Fourteenth U.S. Coast Guard District (USCG), the Director of the American Samoa Environmental Protection Agency (ASEPA), and/or their authorized representatives to:

1.9.1. Enter into, upon, or through the permittee's premises, vessels, or other premises or vessels under the control of the permittee, where, or in which, a source of material to be dumped is located or in which any records are required to be kept under the terms and conditions of this permit or the Act;

1.9.2. Have access to and copy any records required to be kept under the terms and conditions of this permit or the Act;

1.9.3. Inspect any dumping equipment, navigational system equipment, monitoring equipment or monitoring methods required in this permit;

1.9.4. Sample or require that a sample be drawn, under EPA, USCG, or ASEPA supervision, of any materials discharged or to be discharged; or

1.9.5. Inspect laboratory facilities, data, and quality control records required for compliance with any condition of this permit.

1.10. Material which is regulated by this permit may be disposed of, due to an emergency, to safeguard life at sea in locations or in a manner that does not comply with the terms of this permit. If this occurs, the permittee shall make a full report, according to the provisions of 18 U.S.C. § 1001, within 15 days to the EPA Regional Administrator, the USCG and the ASEPA describing the conditions of this emergency and the actions taken, including the location, the nature and the amount of material disposed.

1.11. The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of rights, nor any infringement of Federal, State or local laws or regulations, nor does it obviate the necessity of obtaining State or local assent required by applicable law for the activity authorized.

1.12. This permit does not authorize or approve the construction of any onshore or offshore physical structures or facilities, or, except as authorized by this permit, the conduct of any work in any navigable waters.

1.13. Unless otherwise provided for herein, all terms used in this permit shall have the meanings assigned to them by the Act or 40 C.F.R. Parts 220 through 228, issued thereunder.

2. SPECIAL CONDITIONS - DISPOSAL SITE AND FISH PROCESSING WASTE CHARACTERIZATION

Special conditions are necessary to define the length of the permit period, identify the disposal site location, describe fish processing wastes and define maximum permitted limits for each fish processing waste.

2.1. Location of the Waste Generator and Duration of the Permit

2.1.1. The material to be dumped shall consist of fish processing wastes, defined in Special Conditions 2.3 and 2.4, generated at the permittee's fish cannery in Pago Pago, American Samoa.

2.1.2. This permit shall become effective on July 31, 1993 and it shall expire three years from the effective data at midnight on July 31, 1996.

2.2. Location of Disposal Site

Disposal of fish processing wastes generated at the location defined in Special Condition 2.1.1 shall be confined to a circular area with a 1.5 nautical mile radius, centered at 14° 24.00' South latitude by 170° 38.30' West longitude.

2.3. Description of Fish Processing Wastes

2.3.1. During the term of this permit, and according to all other terms and conditions of this permit, the permittee is authorized to transport for disposal into ocean waters quantities of fish processing wastes that shall not exceed the following amounts:

Table 2. Volumes of Fish Processing Wastes Authorized for Disposal.

Fish Processing Waste	Maximum Volume Authorized for Disposal (gallons/day)
Dissolved Air Flotation (DAF) Sludge	60,000
Precooker Water	100,000
Press Water	40,000
Maximum Daily Volume	**200,000**

2.4. Fish Processing Waste Limits

Table 3. Limits for DAF Sludge, Precooker Water and Press Water.

Physical or Chemical Parameter (units)[a]	DAF Sludge	Precooker Water	Press Water
Total Solids (mg/L)	461,790	115,180	381,510
Total Volatile Solids (mg/L)	455,560	84,450	409,310
5-Day BOD (mg/L)	349,350	64,650	365,550
Oil and Grease (mg/L)	395,700	11,180	165,860
Total Phosphorus (mg/L)	3,790	1,850	2,950
Total Nitrogen (mg/L)	21,820	12,830	35,100
Ammonia (mg/L)	3,470	410	830
pH (pH units)	4.8 to 7.0	5.5 to 6.6	5.5 to 6.8
Density (g/mL)	0.86 to 1.05	0.95 to 1.06	0.96 to 1.06

a = All calculated values were rounded to the nearest 10, except the density and pH ranges.

2.4.2. Permitted Maximum Concentrations for each type of fish processing waste were calculated based on an analysis of historical data from the permittee's previous Special Ocean Dumping Permit, number OD 90-02. The calculations followed EPA's recommended procedure for determining permit limits as defined in the EPA document titled: "Guidance Document for Ocean Dumping Permit Writers" (January 30, 1988). EPA will periodically review these limits during the permit to evaluate the accuracy of the limits. If revisions are necessary, EPA will make changes according to the authority defined in the Ocean Dumping Regulations at 40 C.F.R §§ 223.2 through 223.5.

2.4.3. The Permitted Maximum Concentrations, density range and pH range listed above, shall not be exceeded at any time during the term of this permit.

3. SPECIAL CONDITIONS - ANALYSIS OF FISH PROCESSING WASTES

Compliance with the permitted maximum concentrations defined in Special Condition 2.4 shall be determined by monthly monitoring of **each of the fish processing waste stream** permitted for ocean disposal. Additional analyses of fish processing wastes and reporting requirements are defined in this section. Any sampling dates shall be scheduled within the first two weeks of the month to allow enough time for laboratory analyses and report writing to comply with Special Condition 3.3.

3.1. Analyses of Fish Processing Wastes

3.1.1. Concentrations or values of the parameters listed in Special Condition 2.4 and those listed in the table below shall be determined for each fish processing waste stream. A sample of each fish processing waste stream shall be taken before the individual streams are mixed before being pumped into the disposal vessel. A sample shall consist of three replicate samples, taken on the day that sampling is scheduled, pooled for use as a composite sample. The detection limits specified in Table 4 shall be used in all fish processing waste stream analyses.

Table 4. Physical and Chemical Parameters to be Analyzed from Individual Samples of DAF Sludge, Precooker Water and Press Water.

Parameter	Method Detection Limit
Total Solids	10.0 mg/L
Total Volatile Solids	10.0 mg/L
5-Day BOD	10.0 mg/L

Parameter	Method Detection Limit
Oil and Grease	10.0 mg/L
Total Phosphorus	1.0 mg/L
Total Nitrogen	1.0 mg/L
Ammonia	1.0 mg/L
pH	0.1 pH units
Density	0.01 g/mL

3.1.2. All sampling procedures, analytical protocols, and quality control/quality assurance procedures shall be performed according to guidelines specified by EPA Region IX. The following references shall be used by the permittee:

3.1.2.1. 40 C.F.R. Part 136, EPA Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act;

3.1.2.2. Tetra Tech, Incorporated. 1985. Summary of U.S. EPA-approved Methods, Standard Methods and Other Guidance for 301(h) Monitoring Variables. Final program document prepared for the Marine Operations Division, Office of Marine and Estuarine Protection, U.S. Environmental Protection Agency. EPA Contract No. 68-02-693. Tetra Tech, Incorporated, Bellevue, Wa.; and

3.1.2.3. Environmental Protection Agency. 1987. Quality Assurance and Quality Control for 301(h) Monitoring Programs: Guidance on Field and Laboratory Methods. Office of Marine and Estuarine Protection, Washington, D.C. EPA 430/9-86-004.

3.1.3. Any parameters listed in Special Condition 3.1.1 that are shown to be consistently undetected, may be eliminated from further analytical tests. Before elimination of the parameter is permitted, the permittee shall obtain written approval from EPA Region IX and the ASEPA.

3.2. Analytical Laboratory

3.2.1. Within 30 days of the effective date of this permit, the name and address of the contract laboratory or laboratories and a description of all analytical test procedures and quality assurance/quality control procedures, including detection limits being used, shall be provided for EPA Region IX approval.

3.2.2. Any potential variation or change in the designated laboratory or analytical procedures shall be reported, in writing, for EPA Region IX approval.

3.2.3. EPA Region IX may require analyses of quality control samples by any laboratories employed to comply with Special Condition 3.1 and Appendix A. Upon request, the permittee shall provide EPA Region IX with the analytical results from such samples.

3.2.4. A complete analysis of parameters, required in Special Condition 3.1, shall be made by the permittee and reported to EPA Region IX and the ASEPA whenever there is a change in the quality of the fish processing waste, process configuration, or fish processing waste treatment. If required by EPA Region IX, bioassays shall be required in addition to parameter analyses.

3.3. **Reporting**

3.3.1. The permittee shall provide EPA Region IX, ASEPA, the National Marine Fisheries Service (NMFS), the U.S. Fish and Wildlife Service (USFWS) and the Western Pacific Regional Fishery Management Council (WPRFMC) with a report, prepared every 6 months during the permit period, that contains the following information:

3.3.1.1. Daily volumes of DAF sludge, Precooker Water and Press Water removed from the permittee's facility, and loaded into the disposal vessel reported in gallons per day using Form 1 (see Appendix B);

3.3.1.2. Monthly fish processing waste stream analyses demonstrating that the fish processing wastes being dumped comply with the permitted limits of parameters listed in Special Condition 2.4 and a summary of the volumes of fish processing wastes disposed at the ocean site using Form 2 (see Appendix B);

3.3.1.3. The monthly amount of alum (aluminum sulfate) and coagulant polymer added to the fish processing waste streams reported in pounds per month (see Forms 1 and 2).

3.3.2. Such reports, including a comparison with the permit limits as required on Forms 1 and 2, shall be submitted to EPA Region IX, ASEPA, NMFS USFWS and WPRFMC within 45 days of the end of the preceding 6-month period for which they were prepared. The reports shall be submitted within this time unless extenuating circumstances are communicated to EPA Region IX and the ASEPA in writing. In addition to a hard copy of Forms 1 and 2, the data contained on Form 1 shall be submitted to EPA Region IX on a 3.5" computer diskette in a format compatible with LOTUS version 2.2.

3.3.3. A summary report of all 6-month reports listed in Special Condition 3.3.1, including a comparisons with permit limits and a detailed discussion of the summary results, shall be submitted by the permittee to EPA and the ASEPA 45 days after the permit expires. All fish processing waste stream data shall be reported in the same format as required in Special Condition 3.3.2.

3.3.4. Upon detection of a violation of any permit condition, the permittee shall send a written notification of this violation to EPA Region IX and the ASEPA within five working days and a detailed written report of the violation shall be sent to the agencies within 15 working days. This notification shall pertain to any permit limits (defined in Special Condition 2.4) that are exceeded, violation of volume limits (defined in Table 2 under Special Condition 2.3.1), and any disposal operation that occurs outside the disposal site defined in Special Condition 2.2.

3.3.5. One year from the effective date of this special permit, the permittee shall submit a report to EPA and ASEPA on the results of suspended phase bioassay tests and reevaluation of the model used to predict the concentrations of fish processing wastes disposed at the designated site. The suspended phase bioassays shall be conducted using at least one species from each of the following three groups: Group 1 = *Mytilus* sp. (mussel), *Crassostrea* sp. (oyster), *Acartia tonsa* (copepod), or *Trypneustes* sp. (sea urchin) larvae; Group 2 = *Holmsemysis costata* (mysid shrimp) or *Penaeus vannamei* (white shrimp); and Group 3 = *Citharicthys stigmaeus* (speckled sanddab) or *Coryphaena hippurus* (dolphinfish) juveniles.

Appropriate suspended phase bioassay protocols, either protocols approved by EPA or protocols published by the American Society for Testing and Materials (ASTM), shall be followed. Suspended particulate phase bioassays shall be run using the following fish processing waste concentrations: 100%, 75%, 50%, 25%, 12.5% and a control (0%). A minimum of five replicates are required per dilution concentration. Concurrent reference toxicant tests shall be conducted when the suspended phase bioassays are run.

A sampling and testing plan shall be submitted to EPA Region IX and ASEPA for approval before the bioassay tests are conducted. The testing plan should also include a proposal to reevaluate the disposal site model using results obtained from the new series of suspended phase bioassays. These bioassays are being required to confirm the toxicity of the fish processing wastes and to reevaluate the disposal operations based on the use of different disposal vessels.

The bioassay and model confirmation report shall contain the following information:

3.3.5.1. INTRODUCTION AND PROJECT DESCRIPTION

The project description should include the following information about fish processing waste toxicity, previous bioassay test results, previous modelling at the ocean disposal site, and the design of the new bioassay tests.

3.3.5.2. MATERIALS AND METHODS

Fish processing waste sampling and sample handling procedures should be described or referenced.

References for laboratory protocols for suspended phase bioassay tests.

1) EPA-approved methods and references.

2) Test species used in each test, the supplier or collection site for each test species, and QA/QC procedures for maintaining the test species.

3) Source of seawater used in reference, control and bioassay tests.

4) Data and statistical analysis procedures.

5) Limiting Permissible Concentration (LPC) calculations.

6) Description of model selected to evaluate dispersal of fish processing wastes at the ocean disposal site. Use of this model shall be approved by EPA Region IX and ASEPA before it is used by the permittee to evaluate the fish processing waste disposal plume.

3.3.5.3. DESCRIPTION OF SAMPLING PROCEDURES

QA/QC procedures and actual sampling procedures used during fish processing waste stream sampling and handling of the samples.

3.3.5.4. FINAL RESULTS, ANALYSIS OF DATA AND DISCUSSION

1) Complete bioassay data tables and summary bioassay tables shall be furnished in the report. All data tables should be typed or produced as a computer printout.

2) The permittee shall analyze the bioassay data and calculate the LPC of the material as defined at 40 C.F.R. § 227.27(a-b).

3) The permittee shall use the LPC in the approved plume model to determine the concentration of fish processing wastes disposed at the

designated ocean disposal site which complies with EPA's Ocean Dumping Criteria defined at 40 C.F.R. Parts 227 and 228.

3.3.5.5. REFERENCES

This list should include all references used in the field sampling program, laboratory protocols, LPC calculations, modelling analyses, and historical data used to evaluate the fish processing waste disposal operations at the designated ocean disposal site.

3.3.5.6. DETAILED QA/QC PLANS AND INFORMATION

The following topics should be addressed in the QA Plan:

1) QA objectives.

2) Organization, responsibilities and personnel qualifications, internal quality control checks.

3) Sampling and analytical procedures.

4) Equipment calibration and maintenance.

5) Sample custody and tracking.

6) documentation, data reduction, and reporting.

7) Data validation.

8) Performance and systems audits.

9) Corrective action.

10) Reports.

4. SPECIAL CONDITIONS - VESSEL OPERATIONS

Specifications for vessel operations are defined to limit dumping activities to the dump site identified in Special Condition 2.2 and to record all dumping activities. Fish processing wastes from the permittee's waste streams and fish processing wastes of other authorized permittees may be loaded into the disposal vessel together. If the waste transported to the disposal site is a combination of materials from the two plants, each permittee shall be liable for all permit conditions regarding disposal of the fish processing wastes. If the fish processing wastes disposed at the site are only generated at the VCS Samoa Packing plant, then VCS Samoa Packing shall be solely liable for all permit conditions pertaining to the disposal operation.

4.1. Posting of the Permit

This permit, or a true copy thereof, shall be placed in a conspicuous place on any vessel which is used for the transportation and dumping authorized by this permit. If the dumping vessel is an unmanned barge, the permit or true copy of the permit shall be transferred to the towing vessel.

4.2. Vessel Identification

Every vessel engaged in the transportation of wastes for ocean disposal shall have its name and number painted in letters and numbers at least fourteen (14) inches high on both sides of the vessel. The name and number shall be kept distinctly legible always, and a vessel without such markings shall not be used to transport or dump waste material.

4.3. Determination of the Disposal Location Within the Dump Site

On each disposal trip, the master of the disposal vessel shall determine the location of the disposal operation as follows:

4.3.1. The disposal vessel, as defined under WASTE TRANSPORTER on page 1 of this permit, shall proceed directly to the center of the disposal site at the location specified in Special Condition 2.2.

4.3.2. The master of the vessel shall observe the conditions at the dump site center, noting the vessel's position (latitude and longitude), wind direction and observed surface current direction.

4.3.3. After the conditions defined in Special Condition 4.3.2 have been recorded, the master of the disposal vessel shall proceed 1.1 nautical miles up current from the center of the disposal site and record the position of the disposal vessel (latitude and longitude). This position shall be the starting point for disposal operations for each disposal trip.

4.3.4. The master of the disposal vessel shall prepare a computerized navigational plot of the procedures defined in Special Conditions 4.3.1 to 4.3.4 and supply these to the permittee. The permittee shall submit these computerized navigational plots with the 6-month reports required under Special Condition 3.3.1. The navigational plot shall include:

4.3.4.1. The disposal vessel's course during the entire dumping operation; and

4.3.4.2. The times and location of entry and exit from the disposal site, position and time of arrival at the center of the disposal site, position and time of arrival at the location 1.1 nautical miles up current from the disposal site, beginning and ending of dumping

operations, and disposal vessel position plotted every 15 minutes while dumping.

4.3.5. The master of the disposal vessel shall sign and date each computerized navigational plot.

4.3.6. The master of the disposal vessel shall certify that disposal occurred in the manner required by the permit.

4.3.7. The procedures listed in Special Conditions 4.3.1 through 4.3.6 shall be repeated for each disposal trip.

4.4. Disposal Rate and Vessel Speed

4.4.1. The disposal vessel/barge shall discharge the material authorized by this permit beginning at the disposal location as determined by Special Condition 4.3.3. The vessel track shall be in a direction that is perpendicular to the current detected at the center of the disposal site as defined in Special Condition 2.2. Disposal shall occur in a oval shape along an axis at least 0.5 nautical miles on either side of the starting point determined in Special Condition 4.3.3. The entire disposal vessel track shall be within the disposal site boundaries.

4.4.1.1. From June 1 through November 30, the disposal operation at the location plotted in Special Condition 4.3.3. shall be conducted at a rate of 140 gallons per minute per knot, not to exceed 1,400 gallons per minute at a maximum speed of 10 knots.

4.4.1.2. From December 1 through May 31, the disposal operation at the location plotted in Special Condition 4.3.3. shall be conducted at a rate of 120 gallons per minute per knot, not to exceed 1,200 gallons per minute at a maximum speed of 10 knots.

4.5. Computerized Navigational System

The permittee shall use an onboard computerized electronic positioning system to fix the position of the disposal vessel accurately during all dumping operations. The computerized navigational system must be approved by EPA Region IX and the USCG Liaison Office (CGLO) Pago Pago. The permittee shall submit the description, specifications and example plots for the computerized navigational system at least 15 working days before the effective date of the permit. Disposal operations shall not begin until EPA Region IX and CGLO Pago Pago provide the permittee with written approval for the computerized navigation system.

4.6. Permitted Times for Disposal Operations

Dumping operations shall be restricted to daylight hours, unless an emergency exists as defined at 40 C.F.R. § 220.1(c)(4). ASEPA and CGLO Pago Pago shall be notified

immediately if an emergency exists and ocean disposal is required to protect human life at sea. No later than 5 working days after the emergency, the permittee and the waste transporter shall provide EPA Region IX, ASEPA and CGLO Pago Pago with a detailed written report on the emergency situation.

4.7. Reporting of the Ocean Dumping Vessel Operations

4.7.1. The waste transporter shall maintain and the permittee shall submit copies of a daily transportation and dumping log, including plots of all information requested in Special Conditions 4.3 and 4.7.2. Copies of the daily logs shall be sent to EPA Region IX, CGLO Pago Pago, and the ASEPA as part of the 6-month report.

4.7.2. The logbook shall contain the following information for each waste disposal trip:

4.7.2.1. Permit number, date and consecutive trip number;

4.7.2.2. Record of contact with ASEPA and CGLO before each trip to the ocean disposal site.

4.7.2.3. The time when loading of the vessel commences and ceases in Pago Pago Harbor;

4.7.2.4. The volume of each waste loaded into the disposal vessel from each fish cannery;

4.7.2.5. The time and navigational position that dumping commences and ceases;

4.7.2.6. A record of vessel speed and direction every 15 minutes during each dumping operation at the disposal site, and a computerized plot of the vessel's course defined in Special Condition 4.3;

4.7.2.7. Discharge rate from the disposal vessel.

4.7.2.8. Observe, note and plot the time and position of any floatable material;

4.7.2.9. Observe, note and plot the wind speed and direction every 30 minutes while dumping wastes at the designated disposal site;

4.7.2.10. Observe and note current direction at the beginning and end of the disposal trip, and the direction of the waste plume at the end of the disposal operation;

4.7.2.11. Observe, note and plot the presence of the previous disposal plume and any unusual occurrences during the disposal trip, or any other information relevant to the assessment of environmental impacts as a result of dumping activities; and

4.7.2.12. Any unusual occurrences noted under Special Condition 4.7.2.9 shall be highlighted in the report defined in Special Condition 3.3.1.

5. SPECIAL CONDITIONS - DUMP SITE MONITORING

The monitoring program for disposal of wastes in the ocean must document effects of disposed wastes on the receiving waters, biota, and beneficial uses of the receiving waters; compliance with EPA's Ocean Dumping Regulations; and determine compliance with permit terms and conditions. Revisions to the monitoring program may be made under the direction of EPA Region IX at any time during the permit term, in compliance with 40 C.F.R. §§ 223.2 and 223.3. This may include a change in the number of parameters to be monitored, the frequency of monitoring, the location of sample stations, or the number and size of samples to be collected.

Implementation of the disposal site monitoring program and all segments of the monitoring program specified in Special Condition 5 and Appendix A shall be the responsibility of the permittee.

5.1. Monitoring Program

The permittee shall conduct the monitoring program, defined in Appendix A, to determine the environmental impacts of ocean dumping of fish processing waste. If possible, monitoring cruises shall be scheduled within the first two weeks of each month to allow enough time for laboratory analysis and report writing in compliance with Special Condition 5.2. The permittee shall notify the ASEPA at least 48 hours before any scheduled monitoring activities.

5.2. Monitoring Reports

Monthly site monitoring reports shall be submitted to EPA Region IX, the ASEPA, NMFS, USFWS and WPRFMC with the 6-month reports as specified in Special Condition 3.3.2. The reports shall include: neatly compiled raw data for all sample analyses, quality assurance/quality control data, statistical analysis of sample variability between stations and within samples for each parameter, and a detailed discussion of the results.

5.3. Final Summary Report

5.3.1. A report shall be submitted to EPA Region IX, ASEPA, NMFS, USFWS and WPRFMC 60 days after the permit expires. This report shall summarize all of

the data collected during the waste material and dump site monitoring programs specified in this special permit.

5.3.2. At a minimum, the summary report shall contain the following sections:

5.3.2.1. Introduction (including a summary of previous ocean disposal activities),

5.3.2.2. Location of Sampling Sites,

5.3.2.3. Materials and Methods,

5.3.2.4. Results and Discussion (including comparisons and contrasts with previous MPRSA § 102 research and special permit data related to disposal of fish processing wastes off American Samoa),

5.3.2.5. Conclusions; and

5.3.2.6. References.

5.4. **Quality Assurance/Quality Control**

5.4.1. All appropriate phases of the monitoring, sampling, and laboratory analytical procedures shall comply with the EPA Region IX-specified protocols and references listed in Special Condition 3.1.2.

5.4.2. The qualifications of the on-site Principal Investigator in charge of the field monitoring operation at the dump site shall be submitted to EPA Region IX and the ASEPA for approval before the initial monitoring cruise. Notification of any change in this individual shall be submitted to EPA Region IX and ASEPA at least 7 days before the cruise is scheduled.

6. SPECIAL CONDITIONS - NOTICE TO REGULATORY AGENCIES

6.1. **Notice of Sailing to the U.S. Coast Guard Liaison Office and the American Samoa Environmental Protection Agency**

6.1.1. The waste transporter shall provide telephone notification of sailing to CGLO Pago Pago at 633-2299 and the ASEPA at 633-2304 during working hours (7:00 a.m. to 3:30 p.m.) no later than 24 hours before the estimated time of departure for the dump site defined in Special Condition 2.2. A record of contact with both agencies shall be reported with other information for each disposal trip.

6.1.2. The waste transporter shall immediately notify CGLO Pago Pago and the ASEPA upon any changes in the estimated time of departure greater than two hours.

6.1.3. Surveillance of activities at the dump site designated in Special Condition 2.2, may be accomplished by unannounced aerial overflights, a USCG shiprider and/or a ASEPA shiprider who will be on board the towing/conveyance vessel for the entire voyage. Within two hours after receipt of the initial notification the waste transporter will be advised whether or not a shiprider will be assigned to the waste transporter's disposal vessel.

6.1.4. The following information shall be provided to CGLO Pago Pago and the ASEPA in the notification of sailing defined above:

6.1.4.1. The time of departure,

6.1.4.2. Estimated time of arrival at the dump site,

6.1.4.3. Estimated time of departure from the dump site, and

6.1.4.4. Estimated time of return to port.

6.2. **Reports and Correspondence**

6.2.1. Two copies of all reports and related correspondence required by General Condition 1.10, Special Conditions 3.2, 3.3, 4.3, 4.5, 4.6, 4.7, 5.2, 5.3, 5.4, 6.1, and all other materials, including applications shall be submitted to EPA Region IX at the following address:

Office of Pacific Island and Native American Programs (E-4)
U.S. Environmental Protection Agency, Region IX
75 Hawthorne Street
San Francisco, California 94105-3901
Telephone (415) 744-1974

6.2.2. Two copies of all reports required by General Condition 1.10 and Special Conditions 4.5, 4.6, 4.7 and 6.1 sent to the U.S. Coast Guard shall be submitted to the following address:

Commanding Officer
U.S. Coast Guard Liaison Office
P.0. Box 249
Pago Pago, American Samoa 96799
Telephone (684) 633-2299

6.2.3. Three copies of all reports required by General Condition 1.10 and Special Conditions 3.2, 3.3, 4.3, 4.5, 4.6, 4.7, 5.2, 5.3, 5.4 and 6.1 sent to the American

Samoa Environmental Protection Agency shall be submitted to the following address:

Director
American Samoa Environmental Protection Agency
Office of the Governor
Pago Pago, American Samoa 96799
Telephone (684) 633-2304

6.2.4. One copy of the all reports required by Special Conditions 3.3, 5.2 and 5.3 shall be sent to the USFWS, the NMFS and the WPRFMC at the following addresses:

Project Leader
Office of Environmental Services
U.S. Fish and Wildlife Service
300 Ala Moana Boulevard
P.0. Box 50167
Honolulu, Hawaii 96850

Western Pacific Program Officer
National Marine Fisheries Service
2570 Dole Street
Honolulu, Hawaii 96822-2396

Executive Director
Western Pacific Regional Fishery Management Council
1164 Bishop Street, Suite 1405
Honolulu, Hawaii 96813

Signed this _____ day of _____, 1993

For the Regional Administrator:

[To be signed when the Final Permit is prepared]

_____
Harry Seraydarian, Director
Water Management Division
U.S. EPA, Region IX

APPENDIX A

SPECIAL OCEAN DUMPING PERMIT OD 93-02
OCEAN DUMP SITE MONITORING PLAN

7. MONITORING OF RECEIVING WATER

Monitoring of the receiving waters at the disposal site defined in Special Condition 2.2 shall be the responsibility of the permittee. Funding and cooperation for site monitoring may be accomplished through an agreement between permittee and other permittees authorized to use the disposal site. Any agreements negotiated between the permittee and other authorized permittees shall be the sole responsibility of the permittee named in this permit. EPA Region IX requires that a monitoring program be developed that complies with the special conditions defined below.

During each monitoring cruise, the fish processing waste plume from the disposal vessel shall be sampled by taking discrete water samples for the measurement of parameters listed in Special Condition 7.2.4. Results of the first 6-month monitoring report will be evaluated by EPA Region IX to determine whether portions of Special Conditions 7 and/or 8 will be revised. The evaluation will be based on documented sampling results and recommendations by the permittee(s).

7.1. Location of Water Sampling Stations

7.1.1. On each sampling cruise, the latitude and longitude of all sampling stations shall be determined and plotted using an acceptable navigational system.

7.1.2. The Principal Investigator shall ensure that discrete water samples are taken at the locations marked in Figure 1.

				Prevailing Surface Current Direction <----------
5	4	3	2	1
Leading Edge of Plume	1.0 nmi	0.5 nmi	0.25 nmi	Starting

Figure 1. Orientation of Sample Stations (Top View) in the Middle of the Discharge Plume Visually Identified at the Time of Sampling.

7.1.3. The following stations, defined in Figure 1, shall be sampled on each sampling cruise:

7.1.4.1. Station 1 shall be the starting point of the dumping operation as determined in Special Condition 4.3.

7.1.4.2. Station 2 shall be 0.25 nautical miles (nmi) down-current from Station 1.

7.1.4.3. Station 3 shall be 0.5 nmi down-current from Station 1.

7.1.4.4. Station 4 shall be 1.0 nmi down-current from Station 1.

7.1.4.5. Station 5 shall be at the leading edge of the discharge plume, but within the plume.

7.1.4. The Principal Investigator shall ensure that each sampling station is positioned as close as possible to the middle of the discharge plume according to his/her best professional judgment.

7.2. Water Column Characteristics to Be Measured

7.2.1. Discrete water samples at Stations 1, 2, 3, 4, and 5 shall be taken at depths of 1, 3, and 10 meters from the surface at the middle of the plume visually identified by the Principal Investigator.

7.2.2. Surface water conditions shall be recorded at all stations including:

7.2.2.1. Wind speed and direction;

7.2.2.2. Current direction and wave height; and

7.2.2.3. Observations of waste, color (e.g., Forel-Ule color scale), odor, floating materials, grease, oil, scum, and foam.

7.2.3. Water samples shall be obtained using a self-closing 3-liter water sample device at each depth listed in 7.2.1.

7.2.4. Water column parameters analyzed from discrete samples taken at the depths listed in 7.2.1 shall include:

Table 4. Physical and Chemical Parameters to be Analyzed from Water Samples Taken at the Ocean Disposal Site.

Parameter[a]	Method Detection Limit
Total Suspended Solids	10.0 mg/L
Total Volatile Suspended Solids	10.0 mg/L
Oil and Grease	10.0 mg/L

Parameter[a]	Method Detection Limit
Total Phosphorus	1.0 mg/L
Total Nitrogen	1.0 mg/L
Ammonia	1.0 mg/L
pH	0.1 pH units

a = Samples should be acidified to pH <2 with sulfuric acid and refrigerated a 4°C until analysis.

7.2.5. Temperature measurements shall be taken at depths of 1, 3, and 10 meters at the starting point of the disposal operation, as defined in Special Condition 4.3.3.

7.3. Frequency of Sampling

7.3.1. Water samples shall be collected when dumping operations occur. Each station listed under Special Condition 7.1 shall be sampled once each month. These samples shall be used to characterize the receiving waters at the disposal site.

7.3.2. Control samples shall be taken at Station 1 before dumping activities.

7.3.3. Station 1 shall be sampled at a point within the plume immediately after discharge operations cease.

7.3.4. Stations 2 through 5 shall be sampled consecutively at distances indicated in Special Condition 7.1.4 to allow efficient sampling of the discharge plume. The time between each sample and the sampling location, beginning with the control sample and ending with the sample collected at the leading edge of the plume, shall be recorded.

7.4. Water Quality Criteria and Standards

7.4.1. The LPC of the liquid phase of the waste material shall not be exceeded at the disposal site boundary four hours after disposal operations cease. The LPC is that concentration of the material which, after allowance for initial mixing as defined at 40 C.F.R. § 227.29, does not exceed applicable American Samoa Oceanic Water Quality Standards (see Table 1). EPA Region IX and the ASEPA will evaluate the LPC based on EPA's Ocean Dumping Regulations and the concentration of parameters measured at the stations sampled during the tenure of this permit.

8. MONITORING OF BIOLOGICAL COMMUNITIES

8.1. Pelagic Resources

8.1.1. All sightings of fish, sea turtles, sea birds, or cetaceans near the disposal site shall be recorded including:

8.1.1.1. Time, location and bearing;

8.1.1.2. Species name(s); and

8.1.1.3. Approximate number of individuals.

APPENDIX B - REPORT FORM 1

Monthly Volumes of VCS Samoa Packing Fish Processing Wastes Loaded Aboard the Disposal Vessel

Month _____ 19__

OD 93-02	DAF Sludge (gallons/day)	Precooker Water (gallons/day)	Press Water (gallons/day)	Total/Day (gallons/day)
Permit Limits	60,000	100,000	40,000	200,000

Disposal Trip Date	DAF Sludge (gallons/day)		Precooker Water (gallons/day)		Press Water (gallons/day)		Total/Day (gallons/day)	

Disposal Trip Date	DAF Sludge (gallons/day)		Precooker Water (gallons/day)		Press Water (gallons/day)		Total/Day (gallons/day)	
Monthly Totals								

NOTE: An asterisk (*) to the right of the fish processing waste volume signifies that a violation of the permit limit has occurred. The number of violations are shown in the Monthly Totals row.

Monthly quantities of alum (aluminum sulfate) and coagulant polymer added to the fish processing waste streams:

Aluminum sulfate: _____ pounds/month

Coagulant polymer: _____ pounds/month

APPENDIX B - REPORT FORM 2
Data Form for 6-Month Report on Waste Stream Analyses for VCS Samoa Packing MPRSA § 102 Permit #OD 93-02

Reporting Period: From _____ 19__ To _____ 19__

VCS Samoa Packing - Dissolved Air Flotation (DAF) Sludge

Month & Year	Total Solids (mg/L)	Total Volatile Solids (mg/L)	5-Day Biological Oxygen Demand (mg/L)	Oil and Grease (mg/L)	Total Phosphorus (mg/L)	Total Nitrogen (mg/L)	Ammonia (mg/L)	pH (pH units)	Density (g/mL)
OD 93-02 Permit Limits	461,790	455,560	349,350	395,700	3,790	21,820	3,470	4.8 to 7.0	0.86 to 1.05

NOTE: An asterisk (*) next to the waste concentration signifies that a violation of the permit limit has occurred.

VCS Samoa Packing - Precooker Water

Month & Year	Total Solids (mg/L)	Total Volatile Solids (mg/L)	5-Day Biological Oxygen Demand (mg/L)	Oil and Grease (mg/L)	Total Phosphorus (mg/L)	Total Nitrogen (mg/L)	Ammonia (mg/L)	pH (pH units)	Density (g/mL)
OD 93-02 Permit Limits	115,180	84,450	64,650	11,180	1,850	12,830	410	5.5 to 6.6	0.95 to 1.06

NOTE: An asterisk (*) next to the waste concentration signifies that a violation of the permit limit has occurred.

Data Form for 6-Month Report on Waste Stream Analyses for VCS Samoa Packing MPRSA § 102 Permit #OD 93-02

Reporting Period: From _____ 19__ To _____ 19__

VCS Samoa Packing - Press Water

Month & Year	Total Solids (mg/L)		Total Volatile Solids (mg/L)		5-Day Biological Oxygen Demand (mg/L)		Oil and Grease (mg/L)		Total Phosphorus (mg/L)		Total Nitrogen (mg/L)		Ammonia (mg/L)		pH (pH units)		Density (g/mL)	
OD 93-02 Permit Limits	381,510		409,310		365,550		165,860		2,950		35,100		830		5.5 to 6.8		0.96 to 1.06	

NOTE: An asterisk (*) next to the waste concentration signifies that a violation of the permit limit has occurred.

VCS Samoa Packing - Summary of Monthly Volumes of Fish Processing Waste Disposed at the Ocean Site and the Amount of Aluminum Sulfate and Coagulant Polymer Added to the Waste Streams.

Month & Year	DAF Sludge (gallons/month)	Precooker Water (gallons/month)	Press Water (gallons/month)	Total Fish Processing Waste (gallons/month)	Aluminum sulfate (pounds/month)	Coagulant polymer (pounds/month)
6-Month Totals						

NOTICE OF APPLICATION AND PROPOSED ACTION
U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA) REGION IX
75 HAWTHORNE STREET
SAN FRANCISCO, CALIFORNIA 94105-3901

Applications for Permits to Transport
and Dump Materials into Ocean Waters

Public Notice for Ocean Dumping Permit Numbers
OD 93-01 and OD 93-02

Pursuant to Section 102 of the Marine Protection, Research and Sanctuaries Act (MPRSA) of 1972, as amended (33 U.S.C. § 1401 et seq.) and 40 C.F.R. § 222.3 of EPA's Ocean Dumping Regulations (42 Fed. Reg. 2462, Jan. 11, 1977), notice is hereby given by this office of complete applications for permits to transport and dispose fish processing wastes into ocean waters of Tutuila Island, American Samoa. The permit applicants are: STARKIST SEAFOOD COMPANY, INC. (an affiliate of H.J. HEINZ COMPANY), 180 East Ocean Blvd., Long Beach, CA 90802-4797 and VAN CAMP SEAFOOD COMPANY, INC., 4510 Executive Dr., Suite 300, San Diego, CA 92121-3029, for their respective subsidiary companies: STARKIST SAMOA, INC., P.O. Box 368, Pago Pago, American Samoa 96799 and VCS SAMOA PACKING COMPANY, INC., P.O. Box 957, Pago Pago, American Samoa 96799.

EPA has made a tentative decision to issue special ocean dumping permits to StarKist Samoa and VCS Samoa Packing Company for a three-year period. The Agency has determined that these permits are required for ocean disposal of fish processing wastes produced at canneries in Pago Pago, American Samoa. The fish processing wastes to be disposed from StarKist Samoa are: dissolved air flotation (DAF) sludge, cooker juice and press liquor. The fish processing wastes to be disposed from VCS Samoa Packing are: DAF sludge, precooker water and press water. Based on dilution levels expected at the designated ocean disposal site, the fish processing wastes are not expected to cause significant long-term impacts to oceanic water quality, marine ecosystems or human health.

The fish processing wastes will be disposed at an ocean disposal site 5.45 nautical miles southeast of Tutuila Island. The ocean disposal site has center coordinates of 14° 24.00' South latitude by 170° 38.20' West longitude and a radius of 1.5 nautical miles. The water depth at the disposal site is about 9,000 feet. This site was designated for use on February 6, 1990 (55 Fed. Reg. 3948) and was used by the two American Samoa canneries for disposal of fish processing wastes under MPRSA § 102 special permits OD 90-01 (StarKist Samoa) and OD 90-02 (VCS Samoa Packing Company) for three years. No significant long-term environmental impacts were found at the site during site monitoring activities.

During the term of special permits OD 93-01 and OD 93-02, the permittees must continue monitoring programs for fish processing waste streams, disposal vessel navigation and monthly ocean disposal site monitoring. Information compiled during the term of these permits and any previous information about ocean disposal of fish processing wastes off

American Samoa will be used by EPA Region IX to determine compliance with EPA's Ocean Dumping Regulations defined at 40 C.F.R. Parts 220 through 228 and the Special MPRSA § 102 permits.

SUMMARY OF INFORMATION AND TENTATIVE DETERMINATION

DAF sludge is waste material that remains after treatment of fish processing wastes to remove grease and suspended particulate matter. DAF sludge also contains aluminum sulfate or alum (an odor reducing chemical) and coagulant polymers (to coagulate suspended matter) that are added during the waste treatment process. Cooker juice or precooker water is a combination of stick water and other process water that collects under the steam precookers at the fish plants. Press liquor or press water is waste water produced at the fish meal plants when fish scrap is cooked and pressed before being dried to produce livestock food meal.

There are no changes in the volumes of fish processing wastes proposed for disposal by either applicant. The proposed disposal volumes are:

Fish Processing Waste	StarKist Samoa (gallons/day)	VCS Samoa Packing (gallons/day)	Total Volume (gallons/day)
DAF Sludge	60,000	60,000	120,000
Cooker Juice	100,000	0	100,000
Precooker Water	0	100,000	100,000
Press Liquor	40,000	0	40,000
Press Water	0	40,000	40,000
Daily Maximum	200,000	200,000	400,000

Based on EPA Region IX's review of data collected under the previous MPRSA § 102 special permits, the following changes are proposed for the new permits: 1) new permit limits have been calculated which are mostly lower than the previous permit limits, 2) analysis of heavy metals in the waste streams has been deleted because data showed low concentrations of all analytes, 3) analysis of petroleum hydrocarbons in the waste streams has been deleted because fish oils interfere with this analysis, 4) a new disposal vessel (the FV TASMAN SEA) is authorized and a new set of bioassays and plume modeling are required to confirm that disposal operations are similar to the previous permitted actions, 5) a computerized navigation system is required to plot the course of the vessel accurately during disposal operations, and 6) new reporting forms have been developed to aid in reporting permit monitoring information. All other general and special conditions are similar to existing conditions in MPRSA § 102 special permits OD 90-01 and OD 90-02.

INITIATION OF HEARINGS AND PUBLIC COMMENTS

Within 30 days of the date of this notice, any person may request a public hearing to consider the issuance of, or the conditions to be imposed upon, these permits. Any such request for a public hearing must: 1) be in writing, 2) identify the person requesting the hearing, 3) state any objections to the issuance of, or to the conditions to be imposed upon, these permits, and 4) state the issues which are proposed to be considered at the hearing. Under 40 C.F.R § 222.4, the Regional Administrator's determination on whether to hold a public hearing shall be based on whether the request presents genuine issues of policy or facts amenable to resolution by public hearing.

Comments on the tentative determination and requests for public hearings may be submitted in writing within 30 days of the date of publication of this notice to: Ms. Janet Y. Hashimoto, Chief, Marine Protection Section (W-7-1), U.S. Environmental Protection Agency, Region IX, 75 Hawthorne Street, San Francisco, CA 94105-3901, telephone (415) 744-1156.

The Administrative Record, which includes the applications, the draft permits, the fact sheet describing the permits and changes from special permits OD 90-01 and OD 90-02, is available for public review Monday to Friday from 9:00 a.m. to 4:00 p.m. at the: EPA Region IX Library, 13th Floor, 75 Hawthorne Street, San Francisco, CA, (415) 744-1510; EPA Pacific Island Contact Office, 300 Ala Moana Boulevard, Room 5124, Honolulu, HI, (808) 541-2710; and American Samoa EPA, Executive Office Building, Office of the Governor, Pago Pago, American Samoa, (684) 633-2304.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

MAY 27 1993

COMMUNICATION STRATEGY

Action: Public Notice of draft Marine Protection, Research and Sanctuaries Act Section 102 permits for StarKist Samoa and VCS Samoa Packing in American Samoa.

Projected Announcement: Monday June 7, 1993

Location: American Samoa

Background: EPA Region IX has made a tentative decision to issue Marine Protection, Research and Sanctuaries Act (MPRSA) Section 102 permits to StarKist Samoa and VCS Samoa Packing. These special permits will allow the canneries to continue disposing of fish processing wastes off American Samoa at an ocean disposal site designated by EPA Region IX in February 1990. The special permits will cover a three-year period, from July 31, 1993 through July 31, 1996. Special conditions in the permits include: 1) waste stream limits, 2) monthly waste stream analyses and reports, 3) confirmatory bioassays and plume model analyses, 4) use of a computerized navigation system aboard a new disposal vessel, and 5) disposal site monitoring. The canneries have been disposing of fish processing wastes off American Samoa since 1979 without any significant adverse environmental effects.

Press Release Information

1. Permit applications by StarKist Samoa and VCS Samoa Packing found to be complete.

2. EPA Region IX's tentative decision is to issue three-year special MPRSA Section 102 permits to both canneries for the period July 31, 1993 through July 31, 1996.

3. Waste stream limits reduced for most parameters because the wastes have been characterized better by the canneries.

4. Confirmatory bioassays and new plume modeling work required because the waste streams are different than previous reports and a new disposal vessel, the FV TASMAN SEA, will be used to dispose of the wastes at the designated ocean disposal site.

5. A computerized navigation system is required to provide more accurate plots of the disposal vessel tracks.

Public Interest: Low

Staff Contact: Patrick Cotter (W-7-1), 4-1163
Division Dir.: Harry Seraydarian (W-1)
Attorney: None
Press Officer: Lois Grunwald (E-2), 4-1588

EPA REGION IX COMMUNICATION STRATEGY

Action: Public Notice of draft Marine Protection, Research and Sanctuaries Act Section 102 permits for StarKist Samoa and VCS Samoa Packing in American Samoa.

Projected Announcement: Monday, June 7, 1993

Materials to be Prepared	**By Whom:**
A: Press Release	Lois Grunwald
B: Draft MPRSA Section 102 Permits	Patrick Cotter
C: Fact Sheet	Patrick Cotter
D: Public Notice for Newspapers	Patrick Cotter

Note: Press Release at day 0 (June 7) after confirmation from newspapers that the Public Notice will be printed as requested.

AUDIENCE	DAY	EPA STAFF	METHOD	MATERIALS
Responsible Parties				
StarKist Foods	-9	Cotter	Phone/Mail	B,C,D
Van Camp Seafood	"	"	"	"
StarKist Samoa	-9	P. Young (E-4)	Ph./Ex.Mail	"
VCS Samoa Packing	"	"	"	"
Media				
American Samoa	0	Grunwald	PR News	A
Hawaii	"	"	"	"
Federal Elected Officials				
NA				
American Samoa Elected Officials				
NA				
Federal Agencies				
USCG Liaison Office, AS	-9	Young	Express Mail	B,C,D
USCG District, HI	-3	Cotter	Mail	"
DOI Territorial & Int. Affairs	"	"	"	"
NOAA Sanctuaries & Reserves	"	"	"	"
COE Honolulu District	"	"	"	"
USFWS HI	"	"	"	"
NOAA NMFS HI	"	"	"	"
FDA SSB	"	"	"	"
American Samoa Agencies				
Togipa Tasuga ASEPA	-9	Young	Express Mail	B,C,D
Lelei Peau, ASCMP	"	"	"	"
Ray Tulafona, ASMWR	"	"	"	"
Alfonso Galea'i, ASEDP	"	"	"	"
Malaestasi Togufau, ASAG	"	"	"	"
Local Elected Officials				
None				

AUDIENCE	DAY	EPA STAFF	METHOD	MATERIALS
Public Affairs None				
Public Interest Groups See mailing list	-3	Cotter	Mail	B,C,D
EPA Offices Oceans and Coastal Protection Division Regional Ocean Dumping Coordinators, Regions I, II, III, IV, VI and X PICO, Hawaii	-3 " "	Cotter " "	Mail " "	B,C,D " "
Other Persons to be Notified None				

MAY 27 1993

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Pacific Legal Foundation
2700 Gateway Oaks Drive, #200
Sacramento, CA 95833

Dr. Joseph D. Germano
Director of Environmental Studies
Science Applications International Corporation
221 Third Street
Newport, RI 02840

9/6/95

Telephone conversation w/ Norman Wei, Starkist. He has no problem w/ Mike Crook doing ocean disposal monitoring from disposal vessel. Suggested sending letter c/o SK-Samoa Engineering.

Pat Young
AS Program Mgr.

ROUTING AND TRANSMITTAL SLIP Date 8/24

TO: (Name, office symbol, room number, building, Agency/Post)	Initials	Date
1. ~~Alan Ota W-3-3~~		8-28-95
2. Pat Young E-4		
3. I don't have any problems as long as the specific times (intervals) and station locations ~~are occupied for this~~ monitoring.		
4.		
5.		

	Action		File		Note and Return
	Approval		For Clearance		Per Conversation
	As Requested		For Correction		Prepare Reply
	Circulate		For Your Information		See Me
	Comment		Investigate		Signature
	Coordination		Justify		

REMARKS

"Draft" letter re: Ocean disposal monitoring. I think we discussed before & was ok w/ you. While I'm waiting for address (from ASEPA) and formal ok from Star-Kist, thought I'd route this by you. When I get the above, Norm will sign letter, I'll date & give you copy. Ok?

Looks OK to me.

DO NOT use this form as a RECORD of approvals, concurrences, disposals, clearances, and similar actions

FROM: (Name, org. symbol, Agency/Post)	Room No.—Bldg.
Pat Young E-4	Phone No. X1594

5041-103

OPTIONAL FORM 41 (Rev. 1-94)
Prescribed by GSA

*U.S. Government Printing Office: 1994 — 300-891/00004

OPINAP FAX TRANSMISSION
USEPA Region 9
Office of Pacific Island and Native American Programs (E-4)
75 Hawthorne Street
San Francisco, CA 94105
FAX NO: (415) 744-1604
VERIFICATION NO: (415) 744-1599

DATE: 8/16/95 **PAGES (incl. cover): 2**

TO: Norman Wei
StarKist Seafoods, Inc.
FAX: 606/689-5408

Jim Cox
Van Camp Seafood Co.
FAX: 619/597-4282

SUBJECT: Request from Mike Crook

FROM: Pat Young, American Samoa Program Manager
USEPA Region 9
Phone: (415) 744-1594

Please see attached letter from Mike Crook. Sheila and I have talked, we have no problem with Mike conducting the monthly monitoring from the disposal vessel. I wanted to be sure that you both were aware of the request and supported it. I know we had problems in the past with one MV ASTRO's captain corresponding with us directly without informing you so I want to be sure this request is supported by both of you.

Please give me a call or reply by fax. If ok with you, I will prepare letter ok'ing this.

Pat

Memo

To: *Pat Young, American Samoa Program Manager - USEPA*

From: *Jim Cox*

Date: *August 22, 1995*

Re: ***OCEAN DUMPING MONITORING BY MIKE CROOK***

Van Camp Seafood Company, Inc. has no objection of continuing with Mike Crook as our contract Ocean Monitoring Chief Investigator. I feel he is the most qualified at this point to do the monitoring and this will also address an important safety issue. Please issue your approval.

I appreciate your advising me of the letter since I was not aware of it.

Jim Cox

JLC:ms
082295.1JC

OPINAP FAX TRANSMISSION
USEPA Region 9
Office of Pacific Island and Native American Programs (E-4)
75 Hawthorne Street
San Francisco, CA 94105
FAX NO: (415) 744-1604
VERIFICATION NO: (415) 744-1599

DATE: 8/30/95 **PAGES (incl. cover): 2**

TO: Norman Wei
StarKist Seafoods, Inc.
FAX: 310/519-2805(Terminal Island)
809/831-4455 (Puerto Rico)

SUBJECT: Request from Mike Crook

FROM: Pat Young, American Samoa Program Manager
USEPA Region 9
Phone: (415) 744-1594

Please see attached letter from Mike Crook. Sheila and I have talked, we have no problem with Mike conducting the monthly monitoring from the disposal vessel. I wanted to be sure that you both were aware of the request and supported it. I know we had problems in the past with one MV ASTRO's captain corresponding with us directly without informing you so I want to be sure this request is supported by both of you.

Please give me a call or reply by fax. If ok with you, I will prepare letter ok'ing this.

(Norman: I had faxed this to your Kentucky address on August 18th. Hope this reaches you either in Puerto Rico or in California.)

PA

August 25, 1995

Patricia N. Young
American Samoa Program Manager
Office of Pacific Islands
US Environmental Protection Agency
75 Hawthorne St. (E-4)
San Francisco, CA 94105

RE: Ocean Dumping Permit Data

Dear Patricia:

Here is a completeness summary of the ocean dumping permit data I made copies of today. You will note only three gaps: OD 90-02 data for July 1991 - December 1992 and OD 93-01 data for July 1993 and August 1993. Heather Trulli, of Battelle, and I will speak with Susan Hitch to see if she has the missing data available.

Year	Sludge Chemistry	Volumes	Waste Chemistry
	Starkist Samoa		
90	Jan-Dec	Aug-Dec	NA
91	Jan-Dec	Jan-Dec	NA
92	Jan-Dec	Jan-Dec	NA
93	Jan-Jul, Sep-Dec	Jan-Jul, Sep-Dec	Feb-Jun, Sep-Dec
94	Jan-Dec	Jan-Dec	Jan-Dec
95	Jan-Feb	Jan-Feb	Jan-Feb
	Samoa Packaging		
90	Jan-Dec	Jan-Dec	NA
91	Jan-Jun	Jan-Jun	NA
92	none	none	NA
93	Jan-Dec	Jan-Dec	Sep-Dec
94	Jan-Dec	Jan-Dec	Jan-Dec
95	Jan-Jun	Jan-Jun	Jan-Jun

Thank you for your assistance.

Sincerely,

Tom Gulbransen

Thomas Gulbransen
Battelle Ocean Science
397 Washington St.
Duxbury, MA 02332

cc: Ch...

Data Missing

Starkist:

Feb 1993 — Aug. 1993

Have Feb-July

June 1994 — Dec. 1994

Have June - Nov. 1994 summary

Missing Dec. 1994

Feb. 1995

Have

[redacted]

Y-Advance I—

Samoa Packing:

Jan — Sept. 1993

Have Jan-June summary

Alan returned files

Only missing SK - Aug 1993

SP July, Aug, Sept. 1993

Mi' - FYI

to: Allan Ota from Hitch

Table 1. Information received for the preparation of the Ocean Dumping Summary Report to the London Dumping Convention by year and discharger.

-6652

	1991	1992	1993	1994	1995
Region 2					
NYCDEP	Jun - Jan	Jan - June			
WCDEF	Feb - Dec[1]				
NCDPW	May - Aug Oct - Dec				
JMEUC	Jan - Mar[2]				
RVSA	Jan - Mar[2]				
LRSA	Jan - Mar[2]				
BCUA	Jan - Mar[2]				
MCUA	Jan - Mar[2]				
PVSC	Jan - Mar[2]				
Region 9					
Starkist-Somoa	Jan - Dec	January & Aug - Dec	January & Sep - Dec	Jan & Feb	
Somoa Packing	Jan - Dec	Jan - Dec			

[1] July data does not appear to be complete. - estimate for missing data/months

[2] The only data received for these months are total volumes presented in Wet and Dry Tonnage. No sludge characterization has been received.

Palast 212/637-3797

Ota 415/744-1980

Alan - As you can all, we have some gaps in the record for the American Samoa site. The Battelle coordinator is Heather Trulli, 617/934-0571. Can you help her arrange time with the people, also? Hitch

TOTAL P.02

OFFICE OF THE GOVERNOR
ENVIRONMENT PROTECTION

Date: 7/25/95

TO: Pat Young, OPNAP

FROM: Sheila W. ASEPA

- ☐ For your approval
- ☐ For your review
- ☐ For your signature
- ☐ Please advice
- ☐ For your information
- ☐ Please let's discuss
- ☐ Draft reply for signature
- ☐ Note and file

Comment:

Letter from Mike Crook on monitoring for ocean dumping vessel! It looks OK to me. Thanks.

Rcd 8/10/95

Sheila Weigmann
ASEPA
Utulei, American Samoa
19 July, 1995

Dear Sheila,

Following up on our conversation concerning the acceptability of conducting the monthly ocean dumpsite monitoring surveys from aboard the discharge vessel itself, here are some reasons as to why this could be allowed;

1) Part 5.1 of the permit indicates that the monitoring trips should be conducted during the first two weeks of each month. In the past this has often been a problem due to poor weather conditions, particularly in the winter months, inhibiting the smaller vessels typically used for the surveys. The much larger and safer discharge vessel would allow the surveys to be conducted during the first few days of every month on a regular basis.

2) There is nothing specific in the permit that prohibits monitoring from the discharge vessel. Because the discharge locations and patterns run by the discharge vessel are monitored on a trip by trip basis with video plotter print-outs, the presence of a second party/vessel is not really essential to verify these procedures.

3) The electronic equipment available on the discharge vessel allows the monitoring procedures detailed in permit parts 7.1.3 - 7.1.45 to be carried out exactly, particularly in regards to starting monitoring station 1 in the middle of the plume at the point where discharge operations began. Of the attached examples, navigational plot printout #2 shows each sample stations' position relative to the original waste plume location when compared to Plot #1 (the required plot of discharge operations for every trip the discharge vessel makes) as well as the distances between monitoring stations and the drift direction of the plume.

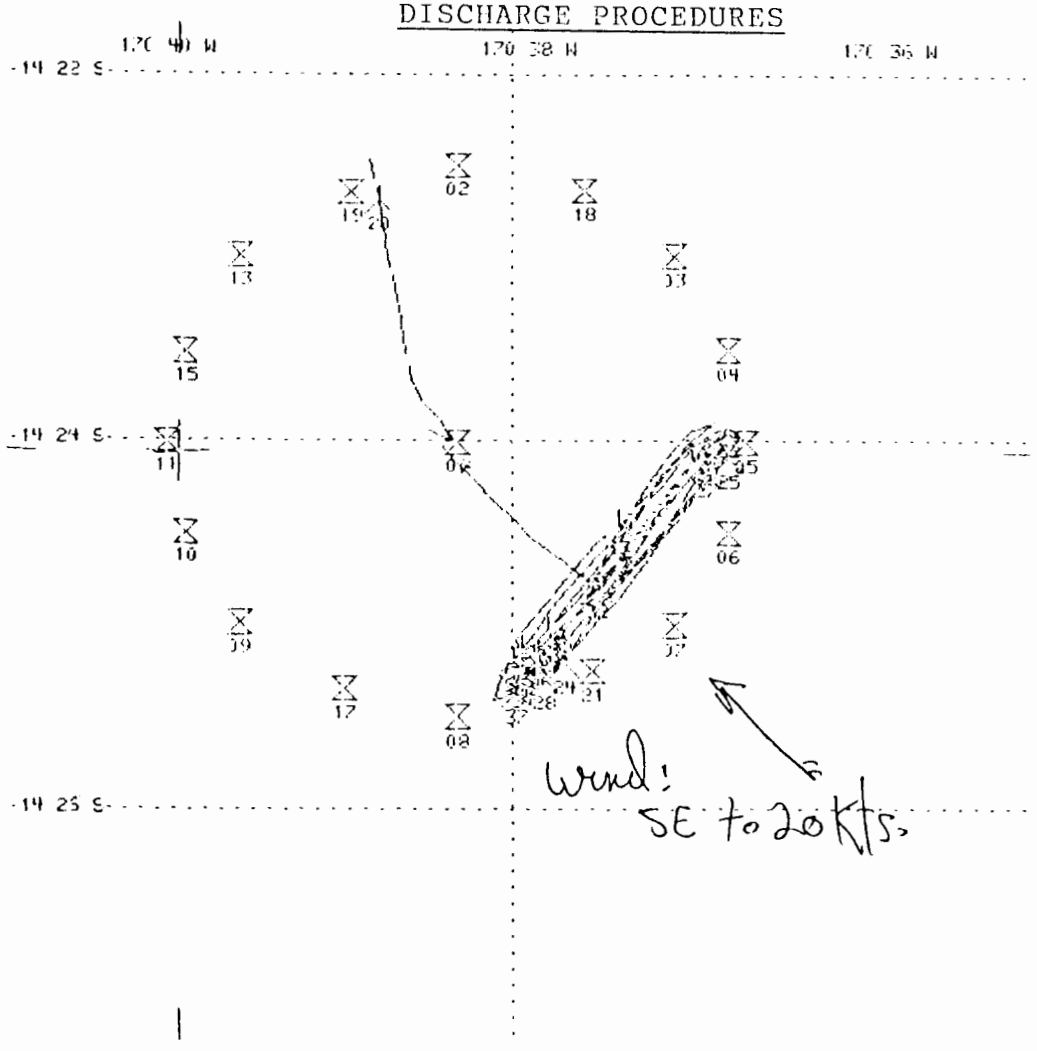
After having conducted these ocean monitoring surveys for more than five years, I cannot objectively see any conflicts or problems generated by doing these monitoring surveys aboard the discharge vessel itself, particularly when it is remembered that it is the permitee(s) (Starkist and VCS) that are in charge of monitoring their own wastewater producing activities.

Best Regards,

Mike Crook, Chief Investigator
Ocean Monitoring Program

PLOT #1

DISCHARGE PROCEDURES



NAVIGATION

SP : CORRECTION OFF
14 25.32 S
170 37.93 W

SPD: 08.2 kn
HDG:046.0 mag.
"C TARGE" :
DST:◆◆◆.◆ nm
BRG:◆◆◆.◆ mag.
CROSS-HAIR :
14 24.06 S
170 39.84 W

WAYPOINT: 00 CE"T

TRACKING: ON Mem. %:02E
AUTOPILOT OFF

CARTOGRAPHY OFF

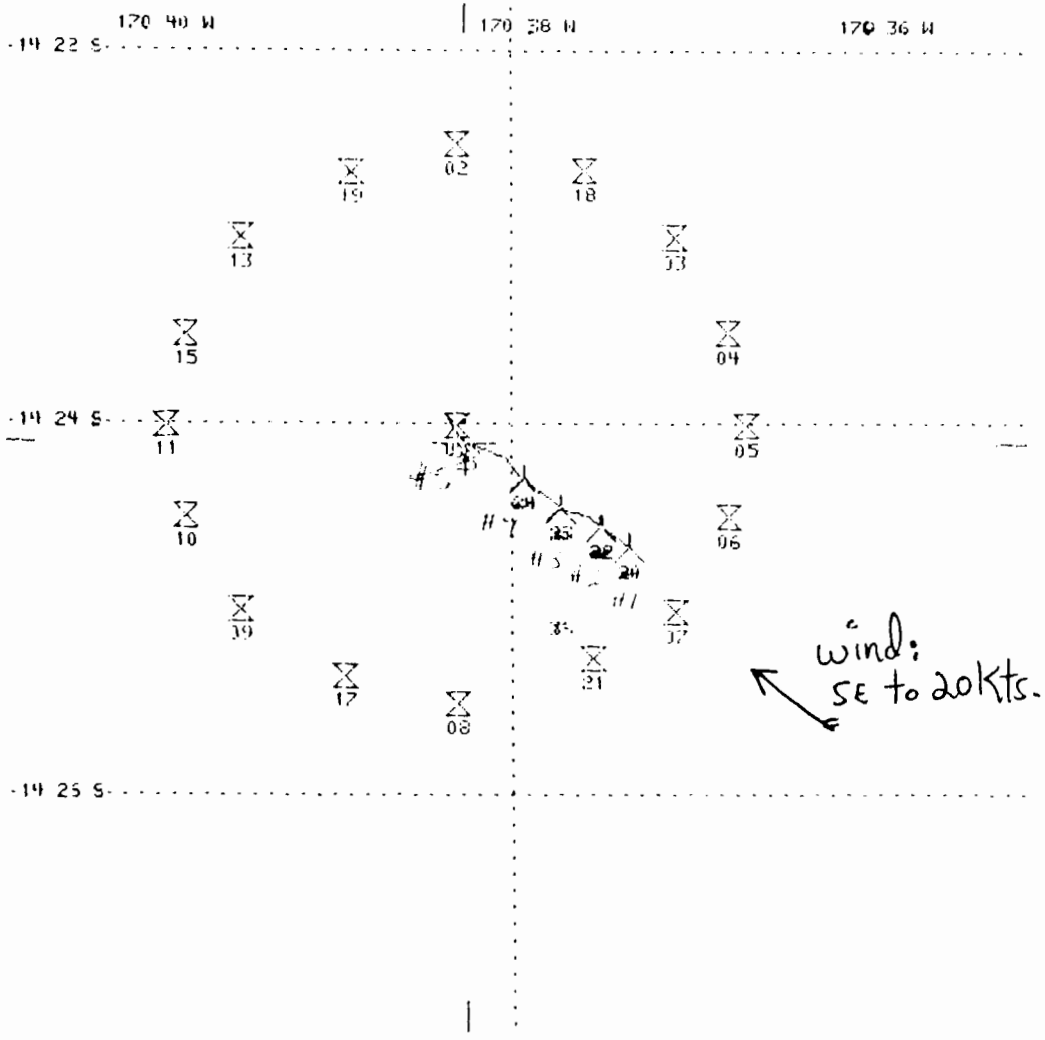
001.00 nm
CENTER CHART SCALE

NOTE PAD

6 July 199
Voyage #4

PLOT #2

SAMPLING STATIONS 1-5



6 July 1995

Ocean Dumpzone Monitoring Stations

Current/Drift direction: North, west

Memo

To: *Pat Young, American Samoa Program Manager - USEPA*

From: *Jim Cox*

Date: *August 22, 1995*

Re: ***OCEAN DUMPING MONITORING BY MIKE CROOK***

Van Camp Seafood Company, Inc. has no objection of continuing with Mike Crook as our contract Ocean Monitoring Chief Investigator. I feel he is the most qualified at this point to do the monitoring and this will also address an important safety issue. Please issue your approval.

I appreciate your advising me of the letter since I was not aware of it.

Jim

Jim Cox

JLC:ms
082295.1JC

9/6/95
Spoke with Norman Lee of SK Foods + he
has no problem w/ Mike Crook's request.
Pat Young

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

September 7, 1995

Michael Crook
Chief Investigator
Cannery Ocean Monitoring Program
c/o StarKist Samoa, Inc.
Attn: Engineering Department
P.O. Box 368
Pago Pago, AS 96799

Re: Conducting Ocean Disposal Site Monitoring from the Cannery Disposal Vessel for Ocean Disposal Permits No. OD-93-01 and OD-93-02

Dear Mr. Crook:

We are in receipt of your letter of July 19, 1995 to the American Samoa Environmental Protection Agency, in which you discuss reasons why the monthly ocean disposal site monitoring for cannery wastes could be done from the disposal vessel. In the past, you have conducted the required monitoring from a separate vessel. We agree with your reasoning that the discharge vessel may be better suited for the monitoring, both from an equipment and safety standpoint, and that the permits do not prohibit monitoring from the disposal vessel. After reviewing your letter, discussing the matter with ASEPA, and finding no objections from Norman Wei of Star-Kist Foods, Inc. and Jim Cox of Van Camp Seafood Company, Inc., we see no reason why we should not grant your request.

Thus, we approve your request to conduct the monthly monitoring of the fish waste disposal site as required by the above-referenced permits, from the disposal vessel. The dumpsite monitoring protocol should continue to be observed, as outlined in the permits. Additionally, please insure that no wastewater is leaking from the boat while samples are being collected. Should you have any questions regarding this matter, please contact Pat Young, American Samoa Program Manager, at 415/744-1594.

Sincerely,

Norman L. Lovelace
Chief, Office of Pacific Islands

cc: Jim Cox, Van Camp Seafoods, Inc.
Norman Wei, Star-Kist Samoa Foods, Inc.
William Perez, Samoa Packing Company
Barry Mills, Star-Kist Samoa, Inc.
Togipa Tausaga/Sheila Wiegman, ASEPA
Michael F. Burns, Blue North Fisheries

cc: Jim Cox, Van Camp Seafoods, Inc.
Norman Wei, Star-Kist Samoa Foods, Inc.
William Perez, Samoa Packing Company
Barry Mills, Star-Kist Samoa, Inc.
Togipa Tausaga/Sheila Wiegman, ASEPA
Michael F. Burns, Blue North Fisheries

bc: Alan Ota (W-3-3)
Mike Lee (E-4)

ROUTING AND TRANSMITTAL SLIP

Date 7/11/94

TO: (Name, office symbol, room number, building, Agency/Post)	Initials	Date
1. Allan Ota		
2. Mike Lee (FYI)		
3.		
4.		
5.		

Action	File	Note and Return
Approval	For Clearance	Per Conversation
As Requested	For Correction	Prepare Reply
Circulate	✓ For Your Information	See Me
Comment	Investigate	Signature
Coordination	Justify	

REMARKS

Allan - I'm giving you these letters for your file. I don't think we need to respond. I reviewed correspondence and it seems to be an internal dispute and protocol on contacting/dealing with ASEPA, CG + us.

DO NOT use this form as a RECORD of approvals, concurrences, disposals, clearances, and similar actions

FROM: (Name, org. symbol, Agency/Post)	Room No.—Bldg.
Pat	Phone No.

5041-102

OPTIONAL FORM 41 (Rev. 7-76)
Prescribed by GSA
FPMR (41 CFR) 101-11.206

★ U.S. GPO: 1990 — 262-080

D. .RREL V. TRACY II

To Allan Ota
copy of letter to
Mike Lee

April 28, 1994

Office of Pacific and Native American Programs (E-4)
U.S. Environmental Protection Agency, Region IX
75 Hawthorne Street
San Francisco, CA 94105-3901

Dear Administrator:

For a month and a half in early 1994 I was the master of the F/V Tasman Sea which served as the waste disposal vessel for Starkist and Van Camp canneries in American Samoa. Please refer to your Ocean Dumping Permits OD 93-01/02 Special. I was shocked to find myself fired on February 18 at a time when I believed that I was doing an excellent job. It turns out that I didn't understand corporate politics. In my opinion I was fired for "failing to ignore my legal responsibilities". I have been unable to receive any satisfaction from my former employer in the form of understanding or severance pay. In the end, I was shorted just under five hundred dollars earned wages in my "final settlement". While I am willing to let go of financial compensation, I still feel an obligation to Samoan friends who are also sensitive to their environment. Without specific purposes in mind, I simply want to give my files to you rather than throw them away in disgust. They may be useful to you In ways I can only imagine..I don't know all of the story. I want you to understand why you may not receive cooperation from future captains...now we both know what happens to those who talk about what they see.

Both canneries were very upset with my dialogue with the local Coast Guard and EPA officials. My dialogue was related to "Unusual Occurrences" which I was required to document on my daily Ocean Dumping Log. These occurrences included finding plastic debris loaded into my tanks for disposal at sea, safety issues relating to required courses that put the ship in the ocean swell's trough, discovering that the method used to determine current direction at the dumping site wasn't giving dependable results, and my documenting oil pollution from foreign fishing vessels which were dumping bilge oil in the dump site with the expectation that I would mask it with cannery sludge. When it became apparent to the canneries that I would not operate blindly (as had all the other captains) they required Blue North Fisheries to replace me.

Enclosed are several documents that should fill you in on the story. The first is my (proposed) letter to Blue North Fisheries. This letter gives a chronological explanation of my actions. A shorter version dated 2/25/94 was recommended (by my legal council) and sent. The hand written letter from Blue North Fisheries is their answer and official explanation of the reasons I was fired. My rebuttal is included. Letters to the EPA and Coast Guard are included along with two faxes from the canneries. My weekly reports to Blue North Fisheries include additional background data. A copy of the ship's log will show that "Unusual Occurrences" were documented on January 12, 19, and February 3, 16. It may be interesting to compare my copy of the ship's log with the copies of the ocean dumping logs that you receive from the canneries in their reports. Please note that Starkist cannery maintains original copies of the Ocean Dumping logs and copies remain on the ship.

I am accepting another employment opportunity that will again put me out of the country in a few weeks. If you have immediate questions, you may reach me via my voice mail at (619) 687-8988 or thru a neighbor at (619) 225-0028.

Sincerely,

Darrel V. Tracy II

2726-419 Shelter Island Drive San Diego, CA 92106

- go modified pattern
- longevity of systems

2/9/94

→ Think prudent capt. to Δ when sit. warrants, when have strong swell.

→ Plume dispersal pattern ? don't know

- chevron - may be higher concent. at apex

Allan → would chevron pattern fall w/in oval pattern prescribed

sh - will stay w/in oval

Capt. told her

→ issue letter

1) Defer to CG (predet. criteria we have → whether very frequently

→ Have Blue North make rec. - (e.g. 4-6 ft. swell

- Report on monthly basis; % of trips did modified pattern

Tasman Sea - higher center gravity

not previous - level of confidence ~~in~~ Astro etc.

~~rear~~

→ model

- Under what conditions? Certain height of waves, at captain's discretion?
- Need to recalculate model - check w/ Costa, canneries.

Coast Guard's assessment of dangers.

Need to notify canneries?

1. Assessment of dangers

2. Both patterns ok? Any preferable; let capt. decide.

3. Under what conditions? Height of waves, wind (have CG help determine) → talk to capt. *needed? - not all cases

4. Notification requirements
(Do they normally call CG + ASEPA 24 hrs to departure? - is it nec.?)
Can they call from ship to notify Δ in cond./disp. gp.
- is written notification w/in 24 hrs. sufficient? or verbal not. when reach shore?

5. Modif. to permit needed? Letter ok

- How often? Should we have canneries model alternate patterns - are these preferable patterns? Include in next permit? (Talk to Wei/Costa.)

6. Why brought to our attention only at this time? Didn't conditions exist before? How often think will happen?

OPINAP FAX TRANSMISSION

US ENVIRONMENTAL PROTECTION AGENCY REGION 9

DATE: 2/3/94 PAGES (incl. cover): 6

TO: Lt. Cmdr. Richard Kaser, USCG-LO FAX: 684/633-1933
Pago Pago, American Samoa

Re: Request From Canneries to Deviate from Ocean Disposal Pattern

---

FROM: Pat Young, American Samoa Program Manager
Phone: (415) 744-1594; FAX (415) 744-1604

We received a request dated 1/17/94 from Blue North Fisheries requesting permission to deviate from the ocean dispoal pattern described in the canneries' ocean disposal permits, under certain ocean conditions. As your office is more familiar with the actual ocean conditions in American Samoa, the disposal vessel, and conditions which may pose a hazard to the ship, we would appreciate your recommendations regarding this request.

Please let me know when it would be convenient for me to call you next week and we can discuss the request. Our view is that we do not want to jeopardize the safety of the vessel and crew and would allow them to deviate from the normal disposal pattern when conditions merit it. However, we would like them to notify us/your office and ASEPA when this occurs; and to stay within the dump site as much as possible. Looking forward to talking with you next week.

BLUE•NORTH FISHERIES

1130 NW 45th
Seattle, WA 98107
(206) 782-3609
Fax (206) 782-3242

January 17, 1994

Sheila Weighman
Environmental Coordinator
Environmental Protection Agency
Office of the Governor
Pago Pago, Am. Samoa. 96799

Dear Ms. Weighman,

The Master of the Tasman Sea requests permission to deviate from the required oval dumping pattern described in Ocean Dumping Permits OD 93-01/02 Section 4.4.1. For reasons related to ships stability, personal safety and wearing of the ship. It is important that he be allowed to choose between two additional course patterns which generally lay within the oval area described in section 4.4.1. Please consider the following information:

Oval patterns which are perpendicular to the prevailing current often require the ship to travel in the trough for long periods of time. Certain combination of sea and swell can make a ship roll heavily while it travels in the trough. The action is amplified when travelling with slack tanks. Because of the foaming characteristics of cannery wastewater, the tanks remain slack to prevent spills during loading operations. Resultant violent rolling is dangerous to the ships furnishings, the crew and the ships stability.

Proposed mitigating action include a chevron shaped pattern, and a modified figure eight as alternatives to the specified ovals. Courses such as these allow the master to find the most stable series of courses for the prevailing conditions. Long courses alternately quarter the seas, use following seas or headseas to stabilize the ride while making quick turns through the trough to minimize unstable conditions. Exhibits 1 & 2 demonstrate the proposed patterns.

Please clarify the oval pattern requirements. Could the minimum sized oval shape be slightly wider than a single line one mile long, centered on a point 1.1 NM up-current from the center and perpendicular to that current? I've noted that if the oval was to be one mile wide at that point, it would extend beyond the dump zone boundaries. See Exhibit 3.

Thank you for your consideration.

Sincerely,

Darrel V. Tracy II
MASTER F/V TASMAN SEA

Enclosures

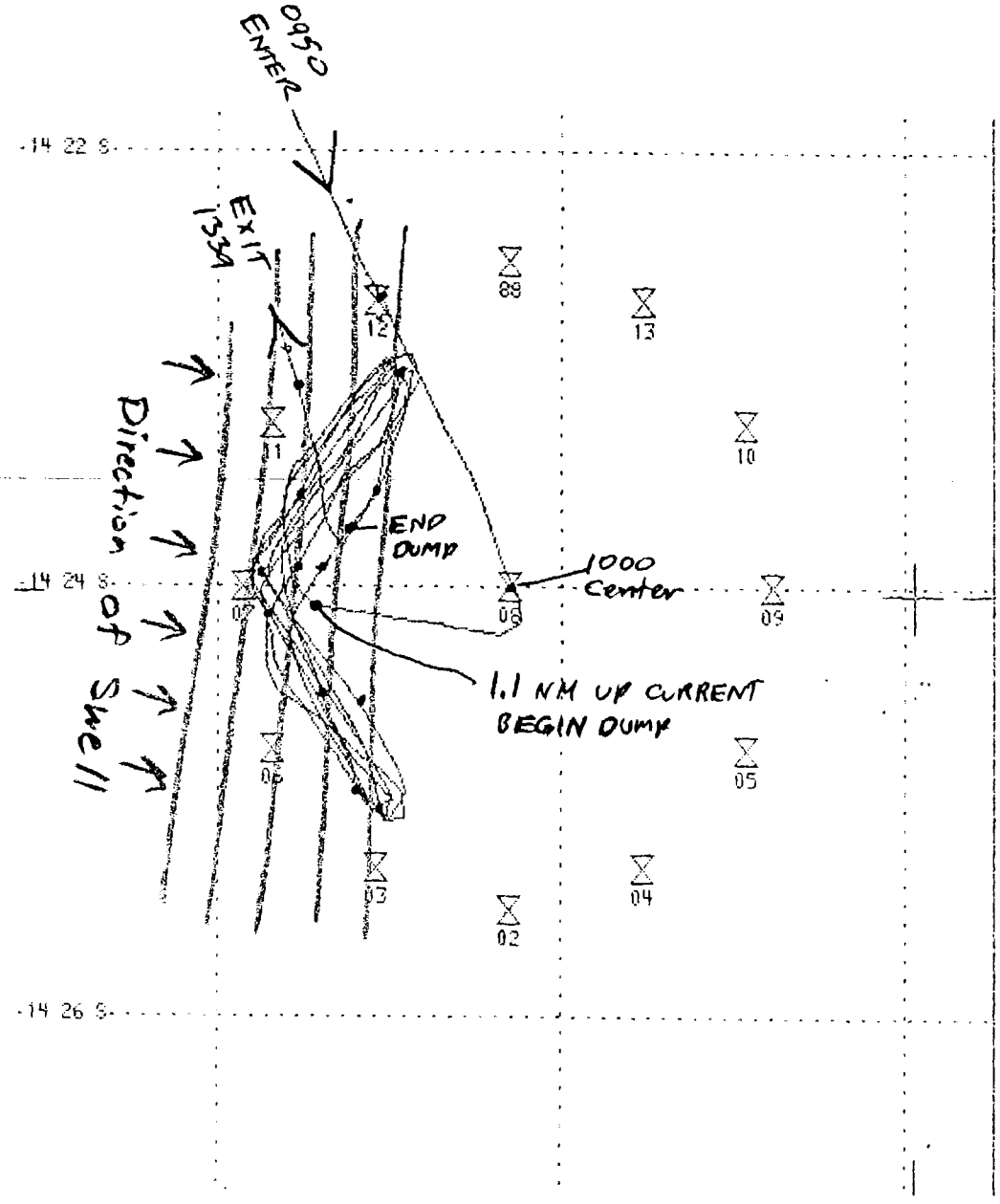
cc: Lt. Cmdr. Richard Kaser USCG-LO
Michael F. Burns - BLUE NORTH FISHERIES

DUMP ZONE PLOT

♦K

EXHIBIT 2: Modified Figure Eight

EXHIBIT 1: Chevron Pattern



14 16.42 S
170 41.17 W
SPD: 209*0 Kn
HDG: 209.0 True
TO TARGET:
DST: ***.* NM
BRG: ***.* True
CROSS-HAIR:
14 24.03 S
170 35.94 W
WAYPOINT: 16
TRACKING: OFF Mem. 2:009
AUTOPILOT OFF
CARTOGRAPHY OFF
001.00 NM
CENTER CHART SCALE
NOTE PAD

VOYAGE 229

January 8, 1994

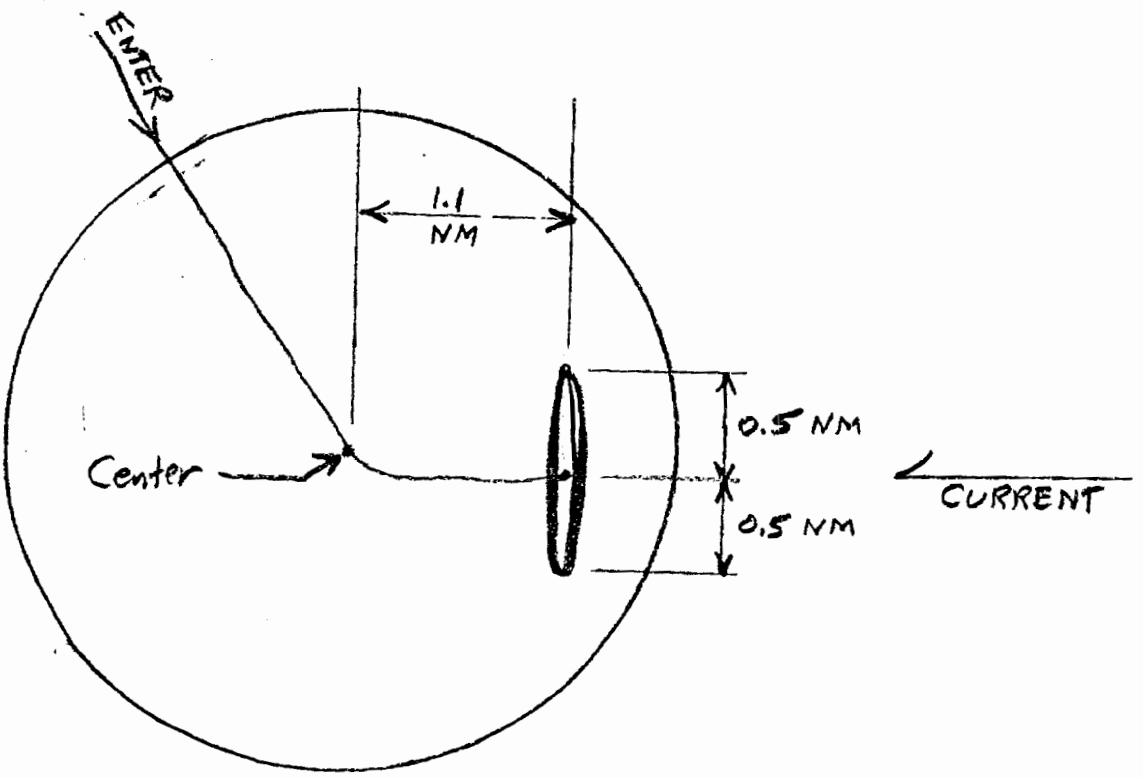
Paul V. Tracy
Master TASMAN SEA

DUMP ZONE PLOT

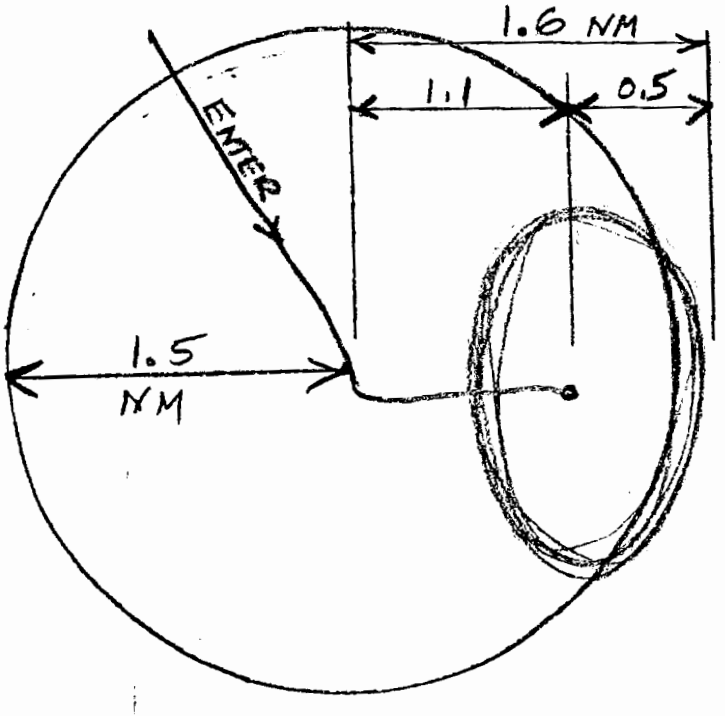
Note: Chevron shaped course necessary to Maintain Ships Stability in Heavy Swell

JAN-18-94 TUE 14:32 ASG-EPA AGENCY P.05

K



Case 1. OVAL PATTERN IS A "LINE" ONE MILE LONG



Case 2. OVAL PATTERN IS "0.5 NM ON EITHER SIDE OF STARTING POINT" Note that other Operators have used this Pattern by shifting it towards the Dump Zone Center.

EXHIBIT 3 : Which Oval Pattern is the Intended Pattern?

Star-Kist Foods Inc.
Facsimile Transmittal

OPTIONAL FORM 99 (7-90)

FAX TRANSMITTAL

# of pages ▶ 5

To Norm Wei	From Pat Young
Dept./Agency STARKIST	Phone # 415/744-1594
Fax # 606/655-5610	Fax # 415/744-1604

NSN 7540-01-317-7368 5099-101 GENERAL SERVICES ADMINISTRATION

DATE: **4 February, 1994**

TO: **Pat Young**

FROM: **Norman S. Wei**

FAX Number:

Number of pages including this cover page: this one only

Our Fax Number is (606) 655-5610

If you have not received all pages of this transmittal, please call Norman Wei at (606) 655-5842.

==========

Special Messages:

Pat

Please re-transmit the fax re Tasman Sea's request to deviate from ocean disposal pattern. Transmission was garbled.

Norman

OPINAP FAX TRANSMISSION
USEPA Region 9
Office of Pacific Island and Native American Programs (E-4)
75 Hawthorne Street
San Francisco, CA 94105
FAX NO: (415) 744-1604
VERIFICATION NO: (415) 744-1599

DATE: 2/3/94 PAGES (incl. cover): 6

TO: Jim Cox, Van Camp Seafood Company, Inc.
FAX: 619/597-4282

Norman Wei, StarKist Foods, Inc.
FAX: 606/655-5610

SUBJECT: Request From TASMAN SEA MASTER to Deviate From Ocean Disposal Pattern

---

FROM: Pat Young, American Samoa Program Manager
USEPA Region 9
Phone: (415) 744-1594

For your information, we received a copy of the attached letter from Sheila and will be consulting with the Coast Guard Liaison Officer in American Samoa for his recommendation. If you agree that such deviations are necessary, and the Coast Guard gives its approval, we will notify you of the conditions under which such deviations can occur, and reporting requirements. I don't believe we will have to modify the permit and a letter will suffice.

Copy to Allan Ota
Mike Lee

2/11/94

To: Pat Young, OPINAP

From: Thaik, ASEPA

Please see attached - quite interesting! The ~~Capt~~ Captain had not provided feedback to me on his previous request. I guess Jim Cox got hint out of shape that the Captain was talking to us. I explained to the Captain about past fines, etc & costs he might be incurring for this company by asking questions. Anyway - will need to address response letters to the Company officials & ce Flow North. I believe we may need another conference call with the USCG on the attached. I ~~Suggested~~ told the Captain, Norm could meet with him & the Company when he comes.

I will try to come to SF 3/13 - I want to bring Shannon but don't have Tony's permission yet. I'll let you know next week. Thx.

Talked to Steve - perhaps hand carried & served his copy of letter - is unsure? He thinks he'd to determine ocean current but surface current might

F/V TASMAN SEA
Starkist Samoa, Inc
Engineering Dept.
Box 368
Pago Pago, American Samoa 96799
011-684-733-2013

10 February 1994

Sheila Wiegman, Environmental Coordinator
Environmental Protection Agency
Office Of The Governor
Pago Pago, American Samoa 96799

Dear Ms. Wiegman:

Attached is a copy of a letter to Jim Cox of VCS Samoa Packing Company asking for assistance with interpreting the Ocean Dumping Permit's requirement for me to observe surface current direction.

Since writing the letter, I have been using a simple vector analysis (as described in the letter) which includes the South Equatorial Current and the Local Wind direction and speed to define the "Observed Surface Current". This method gives logical results, with the plume drifting in a direction parallel to my observed surface current. I am modifying my Ocean Dumping Log form to include the "Ocean Current", the "Wind Direction and Speed", and the observed "Surface Current" as a reminder of the process.

The Question about a southwesterly wind cancelling the ocean current is admittedly a rare case, but I have seen it happen during my five week tenure as Master of the Tasman Sea. Should it happen again I will dump 1.1 NM up-wind unless instructed to do otherwise.

These observations are provided for your information as required by section 4.7.2.11 of the Ocean Dumping Permit

Sincerely,

Darrel V. Tracy II
Master F/V TASMAN SEA.

cc: Mike Burns - Blue North Fisheries
Jim Cox - Van Camp Seafoods
John Perry- Samoa Packing Co.
Russell Riddell - Starkist Packing Co.
Richard Kaser - U.S. Coast Guard

F/V TASMAN SEA
Starkist Samoa, Inc.
Engineering Dept.
Box 368, Pago Pago
Tutuila, American Samoa 96799
011-684-733-2013

4 February 1994

Jim Cox, Director of Engineering
VCS Samoa Packing Co., Inc.
P.O. Box 957
Pago Pago, Am. Samoa 96799

Dear Mr. Cox:

I am experiencing difficulties with Section 4.3 of the Ocean Dumping Permit (Determination of the disposal location within the dump site), and want to share my problem with you.

ISSUE: Ocean Dumping Permits OD93-01/02, Section 4.3.2 requires the dumping vessel's master to describe wind direction and observed surface current at the center of the dump zone and then (in section 4.3.3) proceed 1.1 NM up current to begin disposal.

Past and present vessel operators have been using the local wind direction as an exclusive indicator of surface current. With the aid of a GPS-linked video plotter, I have determined that a southwesterly ocean current also affects surface current in the dump zone. Navigational publications call this the South Equatorial Current. The ocean current effect is most apparent when wind direction is from southerly and westerly directions (SE to NW). During these conditions I have dumped wastewater along southern and western boundaries of the dump zone and observed a plume that either crosses the boundary in a southwesterly direction or remains stationary, depending on wind strengths.

It appears that both the ocean current and local wind should be used (via vector analysis) to determine surface current, and that if the current is determined to be stationary, dumping should take place in the center of the zone.

FACTORS TO CONSIDER:

1) See attached copies of Sailing Directions for Pacific Islands and American Practical Navigator for ocean current descriptions.

2) Absolute surface current cannot be determined until the boat makes it's first full round of a dumping pattern and then observes the plume direction during the second round. Floating objects such as the Tasman Sea or small buoys are more affected by the wind than the ocean current (depending on wind speed) and it is therefore not useful to stop at the center and observe the drift. It is useful to build upon a history of observed ocean current in order to predict present conditions.

3) After dumping, the wastewater separates into two distinct components which are affected differently by surface currents. Light oils accumulate on the surface and are quickly moved by the vectored result of wind and ocean current, but primarily by the wind (especially if it is strong). The remainder of the wastewater mixes with the ocean at a deeper level, producing a color change from deep blue to light blue. These trails move with the same surface currents, but more predominantly with the ocean current. See attached examples of dumping plots.

This issue compromises my ability to ensure compliance with your dumping permit. Please assist me with determining an appropriate resolution to this problem.

Regards,

Darrel V. Tracy II
Master F/V TASMAN SEA

1/13/94

Record of Conversation of 1/11/94

From: Sheila Wiegman, ASEPA Environmental Coordinator

To: Pat Young, American Samoa Program Manager

Sheila called to inform me that the new sludge boat captain was in the process of disposing of the fish waste at the site but due to the rough seas and direction of swells, was encountering difficulty in keeping to the required elliptical disposal route. He asked if it would be ok to use a figure-8 disposal pattern (easier to turn and manuveur under those conditions). I told Sheila it would be ok under the circumstances if he were still in the proper quadrant of the disposal site (upcurrent), as the important factor was dispersal of the waste over the largest area of the site. She said he was and that she also advised him to submit a letter to USEPA informing us of this particular circumstances and to request such a deviation from the normal disposal pattern in the future if similar sea conditions prevail.

cc: Mike Lee
Allan Ota

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

September 14, 1993

Louis F. Diaz
Cal Recovery, Inc.
725 C
Alfred Nobel Drive
Hercules, CA 94547

Dear Mr. Diaz:

As per our recent conversation, enclosed please find the following materials pertaining to the characteristics of American Samoa tuna cannery sludge and high-strength waste and general solid waste on Tutuila Island:

-Copies of new ocean disposal permits recently issued to Samoa Packing and StarKist Samoa: Contain limits on quantities of each waste stream for disposal and limits on characteristics of each waste stream, the latter calculated from data submitted during two-and-a-half years of the first ocean disposal permits;

-Fact sheet: Appendix contains monthly data from which limits were calculated, also includes metals analyses results;

-Summary data sheets for each cannery covering the last six months of the first permit which were not included in fact sheet calculations. (Note that actual quantities of sludge were not reported);

-Final Report on Recycling and Reutilization Study by R.W. Beck, March 1992. Some general information on waste stream composition and quantities.

-Review of Solid Waste Management in American Samoa, SCS Engineers, June 1988. General information on waste stream composition and solid waste management.

As we discussed, we do not have specific data on quantities of sludge being generated/disposed, although it could possibly be calculated from Samoa Packing's data. You may be able to obtain this information from the canneries when you are in American Samoa, or you can call their Mainland contacts (Jim Cox and Norman Wei). I am enclosing a list of cannery contacts with addresses and phone numbers.

The solid waste information is limited. You will be able to obtain more recent information on its management when you talk to people in American Samoa. Sheila Wiegman of the American Samoa EPA would be a good source, as well as Mike Dworsky of the American

Samoa Power Authority. The Power Authority was recently given the responsibility of solid waste management, which was historically managed by the Department of Public Works.

Should you have any questions, please feel free to call me at 415/744-1594; or if I am out of the office, please call Mike Lee of my office and he will be able to help you.

Sincerely,

Pat Young

Pat Young
American Samoa Program Manager
Office of Pacific Island and Native American Programs (E-4)

Enclosures

mike

MEMORANDUM CH2MHILL

TO: Pat Young/USEPA

COPIES: Eugenia McNaughton/USEPA
Norman Wei/StarKist Foods
James Cox/Van Camp Seafood
Sheila Wiegman/American Samoa EPA

FROM: Steve Costa/CH2M HILL/SFO

DATE: 7 August 1995

SUBJECT: **Summary of Ocean Dumping Modeling Results: Starkist Samoa, Inc. and VCS Samoa Packing**

PROJECT: 107091.DS.MD (OPE030702.DS.MD)

Purpose

The purpose of this memorandum is to provide a brief summary of the status of the modeling portion of the ocean dumping studies being conducted under Special Condition 3.3.5 of the Ocean Dumping Permits issued to StarKist Samoa and VCS Samoa Packing. A fully documented report incorporating all bioassay and modeling information is currently being prepared.

Modeling Scope

The modeling study has been done in three parts, as described in the study plan: [1] use of the bioassay results (described in a separate memorandum) with existing model results presented in Appendix B of the 1989 FEIS; [2] an evaluation of the existing model; [3] the development of a revised model approach more representative of changes in vessel characteristics and operational methods.

Existing Model

Based on the descriptions in the 1989 FEIS, the existing model was reproduced and tested. We were not able to exactly reproduce the model results for all cases and believe there are some errors, simplifications or inconsistencies in the original formulation. However, these errors are not "fatal" and generally not significant. The maximum disagreement between results from our formulation and the initial FEIS formulation of the model are on the order of 10 percent, and typically much smaller. Previous model predictions appear to have been

reasonable, and probably conservative, for the development of the ocean dumping siting and operational procedures.

Evaluation of the Existing Model

The existing model was developed based on a previous vessel using a different operational mode of discharge, than currently used. CH2M HILL has considered the current vessel and operational procedures. Based on our evaluation of the existing model, including the possible errors mentioned above and the changes in discharge operation, we believe a revised model is appropriate. The revisions should account for both the discharge of the material directly between the two counter rotating propellers of the Tasman Sea and a more sophisticated approach to dilution in the propeller slip stream. Subsequent dilution can then be calculated following methods similar to those used previously.

Summary of New Model Predictions

The new model developed by CH2M HILL consists of three parts:

- Dumping dilution - results from the initial discharge into the propeller wash and is numerically equivalent to the propeller discharge rate plus the waste discharge rate divided by the waste discharge rate

- Nearfield Dilution - results from the entrainment of seawater into the momentum jet from the propellers which contains the waste discharge

- Farfield Dilution - results from the subsequent dilution of the plume and is essentially the same model used previously.

The dilutions for the range of seasonal and operational parameters are as follows:

- Dumping dilution - ranges from approximately 350:1 to 400:1

- Nearfield dilution - is a function of distance from the vessel and is approximately 80:1 at 1000 feet from the vessel

- Farfield Dilution - depends on a number of environmental variables and can vary widely from season to season and from day to day; using the same dissipation coefficient used previously, the dilution predicted between end of the nearfield zone and the edge of the dump zone is approximately between 20:1 and 50:1

Preliminary Results

The dilutions described above are developed in a multiplicative fashion where the dilution is applied to the concentrations at the beginning of the individual mixing processes. Thus the overall dilution at the edge of the dumping zone is the product of the numerical values provided above. The preliminary results of the model predict dilutions of > 500,000:1 at the edge of the dumping zone. This number will be most sensitive to the assumptions made for the farfield dilution portion of the model. However, even the most conservative assumptions will result in dilutions on the order of 100,000:1 at the edge of the designated dumping area. Discounting any subsequent dilution still results in predicted dilutions of greater than 25,000:1 at a distance 1000 feet downstream of the vessel. All dilutions are considered along the plume centerline and average dilutions are much smaller.

OPINAP FAX TRANSMISSION
USEPA Region 9
Office of Pacific Island and Native American Programs (E-4)
75 Hawthorne Street
San Francisco, CA 94105
FAX NO: (415) 744-1604
VERIFICATION NO: (415) 744-1599

DATE: July 7, 1995 PAGES (incl. cover): 1

TO: Kurt Kline
Advanced Biological Testing Inc.

FAX: 415/435-7882 Phone: 415/435-7878

SUBJECT: Bioassay Test of Cannery Waste on Bi-valve Larvae

FROM: Pat Young, American Samoa Program Manager
USEPA Region 9
Phone: (415) 744-1594

Amy Wagner discussed with me the problems you were having with spawning the mussel larvae necessary for conducting bioassay tests on the cannery waste, and whether you should continue with the tests even though the cannery waste sample is now over 10 days old. Although the sample has been stored properly and refrigerated, we are concerned that given its high organic content and the waste's tendency to increase its ammonia content over time, no meaningful comparison or correlation of results could be made among the results of bioassay tests conducted on mussel larvae using 10-day-old cannery waste and the results obtained with the sand dab and mysid using the fresh sample. Rather than having you conduct the entire series again with the three species using new samples, and given the unrealibility of the mussel spawning, we waive the requirement to conduct the bioassay test on the mussel larvae for this round of sampling.

Should you have any questions, please feel free to call me.

cc: Steve Costa, CH2MHill
Jim Cox, Van Camp Seafoods
Norman Wei, Star-Kist Samoa
Amy Wagner, EPA Lab
Alan Ota, EPA (W-3-3)
Sheila, Wiegman, ASEPA

Ocean disposal file

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX LABORATORY
1337 S. 46TH STREET BLDG 201
RICHMOND, CA 94804-4698

Febrary 17, 1995

SUBJECT: Review of Joint Cannery Outfall Effluent (DCN #OPIN011O95RJB1) and High Strength Waste Bioassay Testing (DCN #OPIN010O95RJB1) Reports

FROM: Amy L. Wagner (P-3-1) Amy Wagner
Laboratory Section

THRU: Brenda Bettencourt, Chief (P-3-1) BBettencourt
Laboratory Section

TO: Pat Young, E-4
OPINAP

I have reviewed the results from the reports entitled **Bioassay Testing of High Strength Waste: Starkist Samoa, Inc. and VCS Samoa Packing**, and **Joint Cannery Outfall Effluent Testing** from the October 1994 sampling. I have additional comments regarding the SOP for effluent sampling. The following items should be incorporated in the next testing period. If you have any questions, please feel free to call me at (510) 412-2329.

→ Laboratory Report of Bioassay Results for High Strength Waste Sampling

1. p. 9, Table 2. The salinity that the mysids were shipped in and any salinity acclimation before testing should be stated in the subsequent reports. The mysids should only experience a change in salinity of $\pm$ 2 ppt per day during acclimation.

2. Appendix Table 12. In the sanddab reference toxicant tests, unacceptably low levels of dissolved oxygen (D.O.) were measured. All test replicates with D.O. below 60% of saturation should be aerated.

Attachment II: Standard Operating Procedures Joint Cannery Outfall Effluent Sampling for Chemistry and Bioassay Toxicity Testing:

1. p. 5, #4: The procedure should also specify that each vial will be checked for air bubbles by slapping it inverted against the palm of the hand. If air bubbles can be seen, more sample should be added to the vial without overfilling.

2. p. 6, #3: A description of sample preservation and verification of pH should be included in this section. Only VOA vials should be preserved before sampling.

3. p. 6, #5: The packaging section should specify that sample jars should be wrapped in a minimum of 2 layers of bubble wrap for shipping.

4. Some general comments about health and safety protective gear (e.g., safety goggles, gloves) should be mentioned in the SOP.

Attachment IV: Laboratory Report, 96-hour Acute Bioassay, Joint Cannery Outfall Effluent Samples

1. p.2, Section 2.2, Sample Preparation: Since the tests were conducted using hypersaline brine to adjust effluent salinity, a brine control should have been conducted. Brine control and dilution water control results must be compared using a t-test at a p= 0.05 level.

2. p. 5, Table 1: An effort should be made to maintain the test conditions as specified in the test methods (EPA 600/4-90/027). The test method specifies that the age of test organisms should be 1-5 days old, with a 24 hour range in age, and the test temperature should be 20 $\pm$ 1° C or 25 $\pm$ 1 °C.

General Comments

1. I have been recently informed that penaeid shrimp in Hawaiian aquaculture facilities have been devastated due to a virus. Every attempt should be made to acquire penaeid shrimp, but if they are not available on the mainland for the spring 1995 testing, I again recommend that the laboratory use mysid shrimp, *Mysidopsis bahia*, as a surrogate species. As specified in the 10/14/94 memo, brine shrimp must be added to test containers daily and a water change using the original effluent sample should be conducted after 48 hours.

cc: Debra Denton, Whole Effluent Toxicity Coordinator (W-5-1)
Allan Ota, Wetlands and Sediment Management Section (W-3-3)
Steven Costa, CH_2M Hill
Kurt Kline, Advanced Biological Testing, Inc.

Copy to Alan Ota Mike Harrepeat

MEMORANDUM CH2MHILL

TO: Pat Young/USEPA

COPIES: Amy Wagner/USEPA (w/ attachments)
Norman Wei/StarKist Foods (w/attachments)
James Cox/Van Camp Seafood (w/attachments)
Sheila Wiegman/American Samoa EPA (w/attachments)
Kurt Kline/ABT (w/o attachments)

FROM: Steve Costa/CH2M HILL/SFO
Karen Glatzel/Glatzel & Associates

DATE: 26 January 1995

SUBJECT: **Bioassay Testing of High Strength Waste: Starkist Samoa, Inc. and VCS Samoa Packing**

PROJECT: OPE030702.DS.BT

Three sets of bioassay tests with high strength waste (HSW) are required by Special Condition 3.3.5 of Starkist Samoa's and VCS Samoa Packing's ocean dumping permits. The results of the second set of tests are presented in the attached: "*Results of a Bioassay Conducted on Two High Strength Waste Samples from the Van Camp and Starkist Tuna Canneries in American Samoa*" prepared by Advanced Biological Testing Inc. (ABT), Tiburon, California, dated November 21, 1994 (Attachment No. 1). The second sampling was conducted on 20 October 1994 and sampling procedures are provided as Attachment No. 2.

Acute effluent bioassays were conducted on *Mysidopsis bahia* (mysid shrimp) juveniles, *Mytilus edulis* (blue mussel) larvae, and *Citharichthys stigmaeus* (speckled sanddab) juveniles using HSW collected separately from the Starkist Samoa and VCS Samoa Packing canneries in Pago Pago Harbor, American Samoa. The results of these bioassays are summarized in the table below. Test results from the first set of tests (16 February 1994 sampling) are included in the table for comparison.

After the first set of tests CH2M HILL and ABT recommended a number of changes to the HSW test protocol (Attachment No. 3). U.S. EPA's response to the recommendations is provided in Attachment No. 4. The recommendation for reducing the maximum concentrations of the samples was accepted by U.S. EPA and after consultation between ABT and EPA new test concentrations were established for the mysid, mussel, and sanddab tests of 2.0, 1.0, 0.5, 0.25, 0.125, and 0.06% as a volume dilution in 30 ppt seawater. The recommendation for dropping the urchin test was accepted by U.S. EPA. The mussel test was continued to investigate the effects of aeration as described below.

In the first test (2/94) it was determined that due to the high oxygen demand, including a high immediate oxygen demand, of the effluent all test containers required aeration

throughout the tests to maintain adequate oxygen concentrations. Aeration is standard protocol for bioassays on fish and invertebrates when oxygen levels fall below 40% of saturation, but is not standard protocol for bioassays on larval bivalves and echinoderms. Therefore, aerating the chambers containing *Mytilus edulis* may give problematic results.

In the second test (October 1994 sampling) gentle aeration was initiated on Day 0, and continued for the duration of the tests. To assess the effects of aeration, an aeration control for the mussel test was run simultaneously. No statistical differences were observed between aerated and unaerated controls. It is now recommended that this type of aeration continue to be used with the mussel test to determine if a permanent change in the protocols for these samples should be made regarding aeration.

After review of the test results, we suggest Amy Wagner contact Kurt Kline, Advanced Biological Testing Inc., directly at (415) 435-7878 to discuss any comments on the bioassay tests or the test protocols. Please contact Steve Costa, at (510) 251-2888 ext 2251, if there are any additional questions regarding this memo.

Summary of High Strength Waste Bioassay Results.

Test Organism	Endpoint	Starkist Samoa		VCS Samoa Packing	
		2/94	10/94	2/94	10/94
Citharichthys stigmaeus (sanddab)	LC_{50}	0.27%	0.35%	0.59%	0.37%
	NOEC	0.20%	0.25%	0.40%	0.25%
	LOEC	0.40%	0.50%	0.80%	0.50%
Mysidopsis bahia (mysid shrimp)	LC_{50}	0.12%	1.16%	0.59%	0.79%
	NOEC	0.05%	0.50%	0.05%	0.50%
	LOEC	0.10%	1.00%	0.10%	1.00%
Mytilus edulis (blue mussel)	LC_{50}	>1.20%	>2.0%	>1.20%	>0.20%
	IC_{50}	<0.08%	0.10%	<0.08%	0.18%
Strongylocentrotus pupuratus (urchin)[1]	LC_{50}	1.20%	-	1.20%	-
	IC_{50}	<0.08%	-	0.10%	-

[1] Urchin test not conducted in 10/94 test period as per direction from U.S. EPA.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

September 30, 1994

Steven L. Costa
Project Manager
CH2M Hill
P.O. Box 12681
Oakland, CA 94604-2681

Re: Third Bioassay Test of Ocean Disposed High-Strength Waste of StarKist Samoa, Inc. and VCS Samoa Packing Company

Dear Steve:

We have reviewed the two options proposed in your letter of September 14, 1994 for the timing of the third bioassay test required by the canneries' ocean disposal permits. We believe that information obtained during the different seasons would prove valuable. Thus, your proposal to change the schedule of the final bioassay test from December 1994 to June 1995 is approved. We understand that this will extend the term of the study beyond that stated in the permits. Since the modeling and evaluation will have been started on the first sets of data, we would expect to see the final study results by October 1995. As you know, the permits expire on August 31, 1996, and the canneries should reapply for permit renewal a few months prior to this expiration date. Because of the implications this report has for the designated ocean disposal site, we would like to receive the modeling and evaluation report with ample time to review it prior to the reapplication period.

Please call me at (415) 744-1594 if we need to discuss this further.

Sincerely,

Pat Young

Pat Young
American Samoa Program Manager
Office of Pacific Island and Native American Programs (E-4)

cc: Jim Cox, Van Camp Seafood Company
Norman Wei, StarKist Seafood Company
Tony Tausaga, American Samoa EPA
Sheila Wiegman, American Samoa EPA
Allan Ota, W-3-3
Amy Wagner, P-3-1

ROUTING AND TRANSMITTAL SLIP

Date 9/16

TO: (Name, office symbol, room number, building, Agency/Post)	Initials	Date
1. Allan Ota W-3-3		
2. Mike Lee		
3.		
4.		
5.		

	Action		File		Note and Return
	Approval		For Clearance		Per Conversation
	As Requested		For Correction		Prepare Reply
	Circulate		For Your Information		See Me
	Comment		Investigate		Signature
	Coordination		Justify		

REMARKS

Pls. see attached suggestion from CH2M Hill. I think we should delay 3rd test to June '95 to accommodate any seasonal variations. Original dates of bioassays were 11/30/93; 2/94 and 5/94. With this change, bioassays will be conducted Feb/March 1994, Oct. '94 and June '95. However, this would delay final report (due 3/95) until about 8/95.

DO NOT use this form as a RECORD of approvals, concurrences, disposals, clearances, and similar actions

FROM: (Name, org. symbol, Agency/Post)	Room No.—Bldg.
Pat Young E-4	Phone No. X1594

5041-102

OPTIONAL FORM 41 (Rev. 7-76)
Prescribed by GSA
FPMR (41 CFR) 101-11.206

* U.S. GPO: 1990 — 262-080

Copy to Mike Allan Otte

CH2M HILL Engineers Planners Economists Scientists

14 September 1993

OPE30702.MA

Mr. Norman L. Lovelace
Chief, Office of Pacific Island and
Native American Programs (E-4)
U.S. Environmental Protection Agency
Region IX
75 Hawthorne Street
San Francisco, CA 94105

Attention: **Patricia N.N. Young**
American Samoa Program Manager

Subject: Bioassay Testing of Ocean Disposed High-Strength Waste of StarKist Samoa, Inc. and VCS Samoa Packing Company

This correspondence is in response to your letter of August 29, 1994. I have asked Kurt Kline of Advanced Biological Testing, the bioassay laboratory we are using for this project, to review Amy Wagner's comments on the first round of testing. He will be able to incorporate all of her recommendations for the remaining bioassay tests. The testing schedule was delayed because of problems with one of the organisms, requiring the collection and shipping of additional samples and additional bioassay tests. We have scheduled the next (second) test for the first week in October, 1994.

The third and final test will be scheduled after the results of the second test have been reviewed, but no earlier than December 1994. However, there are two options available to do the third test: [1] do the third test by the end of 1994 and complete the modeling within the term of the study specified in the permits, or [2], if EPA believes seasonal results would be more valuable, we can extend the study to collect the final sample and do the final bioassay tests about next June (1995). This will extend the term of the study beyond that required by the permits. However, we are starting the modeling and evaluation based on the first set of data. Therefore, we could have near-final study results, using two bioassay tests, done within the term of the permits even if the third bioassay test is postponed. Please let me know which option you would prefer.

CH2M HILL 1111 Broadway, P.O. Box 12681, Oakland, CA 94604-2681 510 251-2426 Fax 510 893-8205

I hope you find the above response and explanations satisfactory. If you have any remaining questions please call me at 510-251-2426 (2251).

Thank you for your time and attention to this matter,

Sincerely,

CH2M HILL

Steven L. Costa
Project Manager

slc/epares.ltr
cc: Norman Wei/StarKist Samoa
James Cox/Van Camp Seafood Company, Inc.
Tony Tausaga/ASEPA
Sheila Wiegman/ASEPA
Mike Lee/USEPA
Allan Ota/USEPA (W-3-3)
Amy Wagner/USEPA (P-3-1)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

January 5, 1994

Steven L. Costa
Project Manager
CH2M Hill
P.O. Box 12681
Oakland, CA 94604-2681

Re: Additional Comments to Draft Study Plans for Joint Cannery Ocean Disposal Modeling Re-evaluation

Dear Steve:

Attached are comments recently received from Walter Frick on the draft study plan for the modeling re-evaluation of ocean disposal of cannery fish waste. I forward these to you for your information and for your consideration when developing the more sophisticated model referenced in the plan.

Please call me at 415/744-1594 if you have any questions.

Sincerely,

Pat Young

Pat Young
American Samoa Program Manager

Enclosure

cc: Jim Cox, Van Camp Seafood Company
Norman Wei, StarKist Seafood Company
Tony Tausaga, American Samoa EPA
Sheila Wiegman, American Samoa EPA

bc: Mike Lee, Allan Ota, Jane Smart

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF RESEARCH AND DEVELOPMENT

ENVIRONMENTAL RESEARCH LABORATORY · NARRAGANSETT
HATFIELD MARINE SCIENCE CENTER
NEWPORT, OREGON 97365

December 17, 1993

MEMORANDUM

PACIFIC ECOSYSTEMS BRANCH
TELEPHONE: (503) 867-4040

SUBJECT: Review of Study Plan for Joint Cannery Ocean Dumping Studies in American Samoa

FROM: Walter E. Frick
Physical/Chemical Processes Team

TO: David Stuart
Region 9 (W-7-1)

The study plan consists of two parts; Part I describes bioassay toxicity tests, and Part II describes a modeling re-evaluation. I asked Janet Lamberson, one of our biologists working with amphipods, to comment on the first part. She concluded that the proposed bioassay toxicity testing plan appeared reasonable.

Concerning Part II: Without benefit of the references, I understand that fish processing wastes will be discharged from a moving vessel. The waste will be dispersed by a combination of wake mixing (including propeller action) and passive diffusion.

As I understand it, the first phase of the model re-evaluation concerns previous modeling work based on Brooks' 4/3 power law dispersion model, which is seen to be overly conservative because it includes only lateral diffusion. The re-evaluation will reestablish this model and compare results with previous findings. The bioassay tests done under Part I will be used to determine whether predicted dilutions allow survival of the test species.

Phase 2 of Part 2 is confusing. It appears to be a critique of the previous modeling approach. The earlier model and assumptions will be re-evaluated. Appropriately, the omission of longitudinal and vertical dispersion, settling, and flotation are noted. That is straight forward enough. What is not clear is what is proposed under re-evaluation of "assumptions and methodology used to chose [sic] the magnitudes of the variables describing the important physical processes." The sensitivity analysis that follows is reasonable.

Phase 3 of Part 2 will produce a new, presumably better, model. It is anticipated that the new model will be less conservative. Presumably, the authors suspect that the previous model will show, incorrectly, that standards will be exceeded. Thus, a less conservative but also more accurate model is necessary. The two approaches will be compared and "predictions will be justified and explained."

How will the differences be justified? The authors note that "Typically a set of field data is used to determine the correct values to use for the coefficients. However, this is beyond the scope of the present study and there is little or no available and appropriate data for this task." In other words, the new model cannot be verified. As such, all the talk about sensitivity is rather meaningless.

The Brooks' 4/3 power law is part of the EPA PLUMES dilution model (Baumgartner, Frick, and Roberts, 1993. Dilution models for effluent discharges, Second edition. EPA/600/R-93-/139), which includes UM and RSB. My suspicions are that the value of the dispersion coefficient that we recommend is overly conservative in many cases. It also employs only lateral diffusion. However, I suspect that since the coefficient is based on various experimental and field measurements that this one mechanism actually parameterizes longitudinal and vertical dispersion indirectly. In other words, by virtue of the fact that the coefficient is derived empirically, the other mechanisms are represented. Thus, to make their effort credible, the authors really need to find some data to verify the changes they propose.

cc: David Young

WEF:ts

Pat

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

December 10, 1993

Steven L. Costa
Project Manager
CH2M Hill
P.O. Box 12681
Oakland, CA 94604-2681

Re: Comments to Draft Study Plans for Joint Cannery Ocean Disposal Bioassay Toxicity Tests and Modeling Re-evaluation

Dear Steve:

We have reviewed the draft study plans for the biotoxicity tests and modeling re-evaluation. Attached are comments on the bioassay toxicity tests which should be addressed before the plan will be approved. Questions regarding these comments should be addressed to Amy Wagner at (510) 412-2329. A final study plan should be submitted for approval upon resolution of these comments.

Due to the delay in submittal of the draft study plan, we are allowing the first sampling episode to occur in January 1994, rather than in November 1993, as indicated in the ocean disposal permits. Thus we approve your request that each of the subsequent three sampling episodes be delayed by the same amount to maintain the desired spacing. However, the completion date for the overall study will not be changed.

The modeling re-evaluation study plan is approved as submitted. However, as we previously discussed, the additional, more sophisticated model referenced in the plan has not been selected yet and will be submitted for EPA's review prior to its utilization.

Please call Pat Young at 415/744-1594 if you have any questions.

Sincerely,

Norman L. Lovelace, Chief
Office of Pacific Island and Native American Programs (E-4)

cc: Jim Cox, Van Camp Seafood Company
Norman Wei, StarKist Seafood Company
Tony Tausaga, American Samoa EPA
Sheila Wiegman, American Samoa EPA

Attachment

bc: Robyn Stuber/Debra Denton, W-5-1
Dave Stuart, W-7-1
Mike Lee, E-4
Amy Wagner, P-3-1
Allan Ota, W-7-1

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

DEC 09 1993

SUBJECT: Review of Draft Bioassay and Modeling Re-evaluation Plans for Tuna Cannery Ocean Disposal Permits

TO: Pat Young
American Samoa Program Manager

FROM: Amy Wagner
Laboratory Section

Debra Denton, Permits Issuance Section, and I have reviewed Part I (Bioassay Toxicity Tests) in the above entitled document. We do not recommend approval of the plan until the following issues are addressed or considered. Any questions concerning these comments can be adressed to me at (510) 412-2329.

1.Introduction, I-1: Considering the nature of the waste discharge, we agree that the fish processing wastes should be considered as whole effluent and not tested in the suspended particulate phase.

2.Sample Shipping and Handling, page I-2: Understanding the logistical difficulties in shipping samples from the South Pacific, it should be recognized that a 10 day hold time could result in an increase or decrease of toxicity. It is likely that the BOD will increase over time as reflected by IDOD values determined in the last toxicity tests on cannery effluent. Every effort to minimize the hold time should be made.

3.Selected Species, page I-2: Holmesimysis costata may not be an appropriate surrogate crustacean due to the low test temperature required and the crustacean's sensitivity to aeration. The use of the 96-hour static renewal acute test with Mysidopsis bahia is recommended as a more representative tropical species relevant to the study area.

4.Sample Preparation, page I-4: Artificial sea salts for brine manipulations of effluents can often cause toxicity. Use of natural seawater brine effluents (obtained from freezing or evaporating natural seawater) is recommended.

5.Experimental Conditions, I-4: The dilution series proposed seems more appropriate than the permit requirements based on toxicity seen at low concentrations of the cannery effluent. This dilution series may have to be modified after the first round of testing.

6.Experimental Conditions, I-5: The test temperatures proposed for the crustacean and sea urchin bioassays are higher than standard method requirements. Tests with M. bahia and P. vannamei are run at 20C, while tests using S. purpuratus are normally run at 12-15C.

7.Experimental Conditions, I-5: Methods for fish, mysid, and sea urchin toxicity tests should be cited (manual or reference) in this section since all test conditions (ie. static renewals, number test organisms) are not listed.

8.Quality Control and Quality Assurance, I-5: Sodium chloride is not a standard reference toxicant used in marine fish and mysid tests. In addition, this salt may cause an osmoregulatory rather than a toxicity response in the test organism causing variable sensitivity and dose-responses. Sodium dodecyl chloride, copper sulfate, or zinc sulfate are recommended reference toxicants for these test organisms.

cc: Terry Oda, Chief
Permits Issuance Section (W-5-1)

OPINAP FAX TRANSMISSION

USEPA, Region IX
Office of Pacific Island and Native American Programs (E-4)
75 Hawthorne Street
San Francisco, CA 94105

FAX: (415) 744-1604
PHONE: (415) 744-1596

DATE: 12/10/93 PAGES: 4 (incl. cover)

TO: Steve Costa ORG: CH2M Hill

FAX NO: 510/893-8205 PHONE NO: 510/251-2426

FROM: Pat Young PHONE NO: (415) 744-1594

NOTE: Comments to ocean disposal permit study plans.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

December 10, 1993

Steven L. Costa
Project Manager
CH2M Hill
P.O. Box 12681
Oakland, CA 94604-2681

Re: Comments to Draft Study Plans for Joint Cannery Ocean Disposal Bioassay Toxicity Tests and Modeling Re-evaluation

Dear Steve:

We have reviewed the draft study plans for the biotoxicity tests and modeling re-evaluation. Attached are comments on the bioassay toxicity tests which should be addressed before the plan will be approved. Questions regarding these comments should be addressed to Amy Wagner at (510) 412-2329. A final study plan should be submitted for approval upon resolution of these comments.

Due to the delay in submittal of the draft study plan, we are allowing the first sampling episode to occur in January 1994, rather than in November 1993, as indicated in the ocean disposal permits. Thus we approve your request that each of the subsequent three sampling episodes be delayed by the same amount to maintain the desired spacing. However, the completion date for the overall study will not be changed.

The modeling re-evaluation study plan is approved as submitted. However, as we previously discussed, the additional, more sophisticated model referenced in the plan has not been selected yet and will be submitted for EPA's review prior to its utilization.

Please call Pat Young at 415/744-1594 if you have any questions.

Sincerely,

Norman L. Lovelace, Chief
Office of Pacific Island and Native American Programs (E-4)

SYMBOL	E-4					
SURNAME	pyoung					
DATE	12/10/93					

U.S. EPA CONCURRENCES OFFICIAL FILE COPY

cc: Jim Cox, Van Camp Seafood Company
Norman Wei, StarKist Seafood Company
Tony Tausaga, American Samoa EPA
Sheila Wiegman, American Samoa EPA

bc: Robyn Stuber/Debra Denton, W-5-1
Dave Stuart, W-7-1
Mike Lee, E-4
Amy Wagner, P-3-1
Allan Ota, W-7-1

11/2 7/93

Conver. w/ Steve Costa

(1) - addit. model not selected yet; will include in study plan he will submit ~~new~~ model for our review prior to using - more refined - Soule's model is continuous discharge model; his will be more appropriate - intermittent dumping e.g. SF dredge disposal model

- ~~#~~

(2) We will try to comment by mid-Dec. They will sample prob. after Jan. 1st - lab not quite set up

---

Ocean disposal permit - effective date 9/1/93
18 months later March 1, 1995 bioassay report due + re-eval of model

ok (1) Revise dates Jan 1994, April 1994, July 1994

ok (2) Using Lig. sea urchin species because of year-round avail.
- Chose back up

? (3) Re. Δ in dilution concentrations based on NPDES bioassay results

(4) Is is ok for test water salinity to be brought up to that of receiv water - not kept at what ~~to~~ critters are accustomed to? What about ptt + ~~temps~~?

5. No food for fish?

6. What's toxicant reference tests?

12/8 Dave Stuart - will check w/ Wally Fitch re: model
- looked at bioassay - no prob. w/it

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105
November 16, 1993

MEMORANDUM

SUBJECT: Request for Review of Draft Bioassay and Modeling Re-evaluation Plans for Tuna Cannery Ocean Disposal Permits

TO: Janet Hashimoto/Dave Stuart
Oceans and Estuaries Section (W-7-1)

Allan Ota
Dredging Team (W-7)

Terry Oda/Debra Denton/Robyn Stuber
Permits Issuance Section (W-5-1)

Brenda Bettencourt/Amy Wagner
Laboratory Support Section (P-3)

FROM: Pat Young
American Samoa Program Manager (E-4)

Attached please find copies of the draft bioassay and modeling re-evaluation plans required by the canneries' reccently-issued ocean disposal permits. We would greatly appreciate your assistance in having the study plans reviewed by your appropriate staff. If additional background information is needed to assist in the review, please let me know.

Of particular note in these drafts are: 1) request for delay of sampling schedule for bioassays; 2) proposal of different organisms for bioassays; and, 3) use of an additional, more sophisticated model for the modeling re-evaluation study. I would greatly appreciate your staff's review of this draft and any comments to me by December 10th if at all possible. The first sampling for the biossay needs to be done by the end of January so that the study results will not be unduly delayed. Should the reviewer need to discuss the technical aspects of the proposal, he/she should feel free to contact Steve Costa of CH2MHill at (510) 251-2426, ext-2251. Please call me at (415) 744-1594 if you have any questions.

Thanks again for your assistance.

Enclosure

cc: Mike Lee (E-4)

Engineers
Planners
Economists
Scientists

November 12, 1993

PDX30702.DS.BP/.MP

Patricia N.N. Young
American Samoa Program Manager
Office of Pacific Islands and Native American Programs
U.S. Environmental Protection Agency
75 Hawthorne Street (E-4)
San Francisco, California 94105

Dear Pat:

Subject: **Draft Study Plan for Special Condition 3.3.5 Ocean Dumping Studies for StarKist and Samoa Packing, American Samoa**

Enclosed is a draft study plan for the bioassay and modeling re-evaluation studies required under the ocean dumping permits for the two canneries. We have suggested an alternative species for the Group 1 bioassays for reasons presented on page I-3 of the draft study plan. Because of the delayed submittal of the study plans it may be necessary to delay the first sampling if the study plan cannot be reviewed quickly or substantial changes are required. I do not see this as a problem and suggest delaying each of the three sampling episodes by the same amount to maintain the desired spacing. This will not delay the completion of the overall project. We can delay the sampling by up to two months or more and still finish the study well ahead of schedule.

Please call me if you have any questions. Comments should be addressed directly to me and copied to Norman Wei and Jim Cox. I have sent Sheila Wiegman at ASEPA the same information.

Sincerely,

CH2M HILL

Steven L. Costa
Project Manager

cc: Norman Wei/StarKist Seafood Company
James Cox/Van Camp Seafood Company

AMERICAN SAMOA GOVERNMENT
PAGO PAGO, AMERICAN SAMOA 96799
OFFICE OF THE GOVERNOR
ENVIRONMENTAL PROTECTION AGENCY

In reply refer to:

Serial:308

November 18, 1993

To: Pat Young, USEPA, OPINAP

From; Sheila Weigman
American Samoa Environmental
Protection Agency

Re: Draft Study Plan for Special Condition 3.3.5
Ocean Dumping Studies for Star Kist and Samoa Packing,
American Samoa

I have reviewed the above-referenced draft plans and find them to be complete and to meet the Ocean Dumping permit requirement. I believe the request for use of an alternative species for the Group 1 bioassay to be appropriate. Please feel free to contact me with any questions.

cc: Steve Costa, CH2M Hill

FY93 warrant # 9/30/93 for FY94

FY94 no $ av c.d FY94

DRAFT STUDY PLAN

FOR

JOINT CANNERY OCEAN DUMPING STUDIES

IN

AMERICAN SAMOA

Prepared for

StarKist Samoa
(Permit OD 93-01 Special)

and

VCS Samoa Packing
(Permit OD 93-02 Special)

Prepared by

CH2M HILL

11 November 1993

STUDY PLAN
FOR
JOINT CANNERY OCEAN DUMPING STUDIES
IN
AMERICAN SAMOA

Special ocean dumping permits have been issued to StarKist Samoa, Inc. and VCS Samoa Packing, Inc. because the Regional Administrator of EPA Region IX has determined that disposal of fish processing wastes off American Samoa meets EPA's ocean dumping criteria at 40 CFR Parts 227 and 228. Special condition 3.3.5 of both permits requires bioassay testing of the waste from each cannery and a re-evaluation of the model previously used to predict concentrations of fish processing wastes disposed of at the designated site. A copy of this special condition is provided in Appendix 1 of the study plan.

The special permit condition addresses two distinct efforts: bioassay testing and model re-evaluation. Although the results of the bioassay testing will be used in the final steps of the model re-evaluation, the two parts of the study are quite different and are best described independently. Therefore, this study plan is presented in two parts:

- Part I: Plan of Study for Bioassay Toxicity Tests
- Part II: Plan of Study for Modeling Re-evaluation

The two portions of the study will be conducted independently except as noted above. References are provided separately for part of the study plan. Additional information is provided in Appendices.

Part I

PLAN OF STUDY FOR BIOASSAY TOXICITY TESTS

INTRODUCTION

Under special conditions 3.3.5 of the Ocean Disposal Dumping Permits, StarKist Samoa and VCS Samoa Packing are required to conduct and submit the results of toxicity tests on fish processing wastes generated at the permittees' American Samoa packing plants. The toxicity tests are to be initiated within 10 days following sampling on November 30, 1993, February 28, 1994, and May 31, 1994. The wastes to be tested include DAF sludge and other high strength waste streams that are barged to sea for disposal at the permitted dump site. This part of the study plan describes the methods proposed to conduct the bioassay tests. The results of the tests will also be incorporated into the modeling re-evaluation described below in Part II of the study plan.

General guidance for these tests is provided by USEPA (1991), ASTM (1992), and the EPA/COE "Green Book" (1991). Specific guidance for performing biological-effects tests for Ocean Disposal permits are outlined in Part III, Section 11 of the Green Book; *Evaluation of Dredged Material Proposed for Ocean Disposal: Testing Manual* (EPA and COE, 1991). However, the fish processing wastes to be disposed under this permits are not similar to solid dredged materials. The high strength waste materials are mostly liquid phase wastes which are positively to neutrally buoyant with a small fraction of negatively buoyant solid particles. This waste is not expected to behave in a fashion typical of solid, generally negatively buoyant, dredge spoil material when disposed of by dumping at sea. Therefore, the physical and chemical nature of the wastes requires modifications to the suspended bioassay tests as outlined in the Green Book.

The following Methods sections include the specific modifications required to properly evaluate the toxicity of the tuna cannery high strength wastes. A description of the proposed reporting schedule and format for the bioassay test results is provided in the Reports section.

SAMPLING METHODS

Sample Composition

High strength waste samples will be collected at each cannery from the existing sampling ports in the storage tank transfer lines. Three samples will be taken at 10 minute

intervals while waste is being transferred from the storage tanks to the barge. Samples for the bioassay tests will be composited from the three discrete samples. Waste from each cannery will be collected and shipped separately and shall not be combined.

Sampling Times

Sampling will be conducted on the following days, if possible:

- Tuesday, November 30, 1993
- Monday, February 28, 1994
- Tuesday, May 31, 1994

If a cannery is shut down, or material is not being transferred to the barge on that day, sampling will be done at the first available time.

Sample Shipping and Handling

EPA approved chain-of custody, sample shipping and handling, and record keeping will be conducted to preserve and monitor the integrity of the samples used for the required bioassays. Samples will be cooled at the canneries after collection and then packed in ice for shipment. The permit requires tests will be initiated within 10 days of sample collection. There are significant and well recognized problems with shipment of material from American Samoa. Every reasonable effort will be made to meed the required 10-day maximum holding time. If the holding times are exceeded for some reason, EPA Region IX will be contacted to determine if the tests should be initiated or if new samples should be collected and shipped.

TEST METHODS

Selected Species

The permit condition requires testing of three species selected from three groups listed in section 3.3.5 of the permit. We propose tests be conducted with the pacific mysid shrimp (*Holmesimysis costata*) juveniles, pacific sanddab (*Citharicthys stigmaeus*) juveniles, and purple sea urchin (*Strongylocentrotus purpuratus*) larvae. These species and life stages were chosen because they represent sensitive crustacean, fish, and zooplankton components of the marine community, tolerate laboratory conditions, and can be readily

tested as young life-stages. These species are also routinely used in conducting bioassays for the ocean disposal permit program. Of great importance are the practicality and year-round availability of the appropriate life-stages of all three of the above species.

The shrimp and fish species were selected from the lists (Group 2 and Group 3, respectively) specified in the permit special condition. The sea urchin species (*Strongylocentrotus purpuratus*) was not listed in the permit (Group 1). We have recommended a different species because it is important that the same species and life-stages be used for each test series conducted. Three test series of bioassays will be conducted over approximately 9 months. The rationale for recommending a different species is as follows:

- The mollusc species listed in Group 1 (*Mytilus* sp. and *Crassostrea* sp.) and the copepod (*Acartia tonsa)* are potentially difficult to obtain at the appropriate life stage at all of the times specified in the permit condition.

- Therefore, sea urchin larvae, also listed in Group 1, are proposed for these tests instead of mollusc or copepod because of their availability at all times of the year.

- However, the sea urchin specifically listed (*Trypneustes* sp.) is not readily available and may be difficult to obtain, particularly at the specific times as required in the permit and an alternate sea urchin species (*Strongylocentrotus purpuratus*) is recommended.

With a limited number of opportunities to evaluate the toxicity of the material to be disposed, it is important to compare the results of bioassay tests using the same species and life-stages.

If necessary, *Mytilus* sp. (mussels) will be used as a backup species to the sea urchin and white shrimp (*Paneaus vannamai*) will be used as a back-up test species for the mysid shrimp should the primary test species be unavailable at the time of the bioassays. All reasonable efforts will be made to consistently use the primary test species.

Acclimation and Holding

All test organisms will be brought into the laboratory and gently acclimated to test conditions and control water (dilution water) for a minimum of 24 hours prior to test

initiation. Salinity, temperature, and dissolved oxygen conditions during test organism holding and acclimation will be monitored to ensure proper acclimation is obtained prior to starting the bioassay tests.

Sample Preparation

Properly refrigerated wastewater samples will brought up to test temperature prior to further test solution preparation. If the salinity of the waste solution is greater than 2 grams per liter less than that of the disposal site receiving water, salinity of the test waste solution will be adjusted with anhydrous sea salts up to the receiving water salinity. Time will be allowed for waste solution pH and salinity equilibration prior to bioassay initiation. Similarly, test control water will be adjusted to appropriate test salinity prior to test initiation.

Initial dissolved oxygen demand (IDOD) has been determined to be a problem with cannery effluent and high strength waste streams. Preliminary IDOD measurements were done at the canneries in October of 1993. The results are given in Appendix 2 of the study plan. IDOD determinations will be conducted and recorded for the samples prior to the start of the bioassays. The results of these IDOD measurements will be used to determine sample dissolved oxygen (DO) conditions and aeration procedures required for the bioassays.

Experimental Conditions

Serial dilutions using filtered natural seawater obtained from the Bodega Bay Marine Laboratory, California will be prepared by volumetric addition of diluent and high strength waste effluents from each cannery. Glass graduated cylinders and other non-contaminating labware will be used to prepare the test solutions. The permit condition requires dilutions of 100, 75, 50, 25, 10, and 5% waste concentrations, as well as a control. Based on previous bioassay results for both the high strength wastes and the joint cannery effluent discharged through the outfall, we recommend that the dilutions used be concentrations of 50, 25, 10, 5, 2.5, 1.25, 0.62, and 0.31 % waste. Control water consisting of diluent water only will also be tested. Five replicate test vessels will be prepared for each test solution and control.

Test vessels will be maintained in controlled temperature incubators or water baths and allowed to acclimate to test conditions prior to the test initiation. Temperature, salinity,

pH, ammonia and DO will be measured prior to test organism assignment into the test vessels. If DO concentrations are less than 40-percent of saturation or less than 4 mg/liter in any test solution or control, aeration will be initiated sufficient to maintain adequate DO levels in all test vessels and in all test concentrations (and controls) to maintain DO concentrations at a levels sufficient to support the organisms. Test photoperiod will be controlled by automatic timers to ensure adequate light for the bioassays.

Test temperatures for the fish, crustacean, and sea urchin bioassays will be 15, 15 and 18 degrees celsius respectively. Salinity for these tests will be that of the receiving water at the disposal site. Test organisms will be randomly assigned into the test vessels. Test vessels will be covered with loose fitting glass or non-contaminating covers and placed into the temperature controlled incubators.

The bioassays will be conducted for 96 hours (4 days). Daily observations to enumerate live fish and mysids and to monitor water quality parameters will be conducted throughout the bioassays. Equal volumes of food will be added to only the mysids to reduce cannibalization of this species within the test vessels.

The effect measured in the fish and mysid bioassays is mortality as defined as: no observed movement exhibited by the test organism after gentle swirling of the test container or probing. The test endpoint for the sea urchin larvae bioassay is mortality and/or larval abnormality as compared to the control organisms.

QUALITY CONTROL AND QUALITY ASSURANCE

The quality assurance objective is to characterize the potential toxicity of each of the canneries high strength waste to marine organisms by collecting bioassay test data of known and acceptable quality. The qualifications of the laboratory and personnel conducting the tests is provided in Appendix 3. The procedures described in the Test Methods section above describe the QA/QC procedures for sampling, analytical procedures, equipment calibration, sample custody, and data reduction and analysis.

Mortality in the controls of less than 10-percent in the fish and crustacean tests and 30-percent in the sea urchin tests after 96 hours will indicate successful tests. If these criteria are not met then EPA will be consulted to determine whether additional tests should be considered. Concurrent reference toxicant tests with the fish and mysid test species will be conducted using sodium chloride and reference toxicant tests with the sea urchin will use copper sulfate solutions with test concentrations bracketing the known

acute toxic concentration (LC50) for each species tested. These tests will be conducted for a 24 hour duration. If the concurrent reference toxicant test LC50 falls within ±2 standard deviations of the testing laboratory's cumulative sum LC50 for that species the tests will be considered acceptable.

If not?

DATA ANALYSIS AND REPORTING

Test data analysis and calculations

Acute mortality and/or larval abnormality data will be used to calculate an acute median lethal (LC50) or effect (EC50) concentration. A computer program (TOXDAT) will facilitate the calculation of the 96 hour LC50 (or EC50 for the zooplankton tests) by either: Probit, Spearman-Karber, or the Trimmed Spearmean-Karber Methods. The analysis used will depend on the distribution of the mortality data obtained from these toxicity tests. These LC50 or EC50 values will then be used to calculate Limiting Permissible Concentrations (LPC's).

Reports

A report of the results of the bioassay tests will be prepared following each of the tests. The report format will be as described in the permit conditions (Sections 3.3.5.1 through 3.3.5.5). Specific information including bioassay materials and methods, sampling procedures, results, data analysis, and discussion will be included in the report. General guidance for the bioassay reports will be that of EPA (1991).

REFERENCES

American Society for Testing and Materials, ASTM. 1992. Standard Practice for Conducting Static Acute Toxicity Tests with Embryos/Larvae of Four Species of Saltwater Bivalve Molluscs. Designation E724-92. Annual Book of Standards, Vol:11.04. ASTM, Philadelphia, PA.

United States Environmental Protection Agency. 1991. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms. Fourth Edition. EPA/600/4-90/027. September 1991. 293 pp.

United States Environmental Protection Agency, United States Army Corps of Engineers. 1991. Evaluation of Dredged Material Proposed for Ocean Disposal: Testing Manual. EPA-503/8-91/001. February, 1991.

Part II

PLAN OF STUDY FOR MODELING RE-EVALUATION

INTRODUCTION

Permit condition 3.3.5 of the Ocean Disposal Dumping Permits for StarKist Samoa and VCS Samoa Packing requires that the bioassay results be used re-evaluate the previous model predictions of dispersion of the plume created by dumping fish processing wastes at sea. The previous predictions are presented in the FEIS (EPA, 1989) and in a supplementary study (SOS, 1990). A field study of the fate of the wastes is described by Soule and Oguri (1983). A description of the previous model and the details of the past modeling results are found in Appendix B of the FEIS.

We propose to conduct the model re-evaluation in three phases:

[1] The existing model formulation, as described in the 1989 FEIS (Appendix B) will be used "as is" with model predictions evaluated using the new bioassay test results. Any differences in conclusions between earlier work and the reevaluation will be presented and discussed.

[2] The input data and assumptions used in the model will be examined and evaluated. Sensitivity studies will be done for critical parameters, including assumed values for diffusion coefficients, initial dilution, and ambient conditions. The appropriateness and applicability of previously assumed values will be discussed.

[3] A different, more sophisticated model(s), and/or modifications to the previous model, using appropriate assumptions, will be applied as an independent check of the previous model predications. The model selection will be based on the results of step [2] above. The objectives of the re-evaluation with a different model is to account for changes in vessel characteristics and operational methods and to develop a more representative model.

The previous model, based on an approach originally developed by Norman Brooks, is typically very conservative in similar applications. Other assumptions in the model are also conservative. The use of a different or modified model will allow an evaluation of the degree of conservatism being applied. The initial dilution assumptions will also be

examined. The propeller stream of the vessel will be modeled, using an established model developed at Texas A&M and modified by CH2M HILL, to assess the actual degree of the initial mixing. Conclusions and recommendations will be presented based on the independent assessment. The three phases of the model re-evaluation are described below.

MODELING METHODS

Re-evaluation of Previous Model Predictions

The results of the previous model are presented in terms of dilution (or concentration) of fish processing waste versus distance from the initial dump site. Based on the results of the bioassay tests, the distance from the dump site where the effluent is diluted to the limiting permissible concentration (LPC) level can be determined.

The previous model provided results parametricly with assumed ocean current speed, pumping rate, settling velocity, and other variables. The re-evaluation will examine the range of ambient receiving water conditions, pumping rates, and effluent characteristics for the new bioassay results to determine worst case conditions.

Appropriate changes in model input parameters, such as vessel beam, vessel speed, or pumping rate, will be incorporated but the model formulation will remain as originally developed. A verification run using identical input for a previous model run will be done to confirm the same formulation is being used. A discussion of any differences between previous predictions and those for the new bioassay test results and compliance with permit conditions will be developed from the results of this phase of the model re-evaluation.

Re-evaluation of Model Assumptions and Input

The model assumptions and input can be considered in three categories:

- Model formulation assumptions: assumptions involved in the basic formulation of the model involving the fundamental physics and mathematics used

- Model development assumptions and input: the assumptions and methodology used to chose the magnitudes of the variables describing the important physical processes

- Model execution assumptions and input: the values used for the description of ambient conditions and characteristics of the waste material.

Each of these categories of model assumptions and input will be examined and re-evaluated. Each of the categories of assumptions and input is discussed in more detail below. In addition to the direct re-evaluation of the model assumptions and inputs, the sensitivity of the model will to important variables will be assessed. The results of the model predictions, and the conclusions drawn from the previous model results (for previous bioassay tests and the new bioassay tests) will be examined and discussed in terms of model assumptions and inputs. Evaluations of the degree of conservatism in the previous model formulation and execution will be presented.

Model Formulation Assumptions. The previous model formulation was based on the approach presented by Brooks (1960), and is essentially the same basic model as CDIFF (Yearsley, 1989). The formulation developed by Brooks calculates the lateral diffusion of a discharge plume as it is advected in the longitudinal direction and does not account for longitudinal dispersion.

As initially developed by Brooks, the approach does not account for vertical diffusion, does not provide for the settlement of negatively buoyant constituents in the plume, and does not account for the dispersion of a positively buoyant plume or positively buoyant components of the discharged material. In addition the model, as implemented in the FEIS, assumes a line source of constant source strength and does not simulate the discharge from a vessel traveling in an arbitrary path for a finite length of time.

The FEIS model provides for a settling velocity by redefining the longitudinal coordinate at a downward angle defined by the relationship between the longitudinal current speed and assumed vertical settling velocity such that:

$$x' = x \cdot \cos(\theta)$$

where

$\theta = \tan(u/w_s)$

u = ambient horizontal, longitudinal velocity

w_s = settling velocity

The FEIS model also accounts for vertical diffusion by applying a concentration reduction factor based on a Fickian diffusion coefficient (K_v). This factor is applied to the calculated centerline concentration (C_{max}) by

$$C_{max} \cdot \{(H/4) \cdot (2 \cdot K_v \cdot t + H^2/16)^{-0.5}\}$$

to calculate an adjusted value of C_{max} accounting for vertical diffusion, where H is the initial vertical plume dimension and t is travel time along the plume trajectory.

Each of the basic assumptions of the model and the modifications made for the FEIS model, as discussed above, will be evaluated. In particular the assumption of a continuous line source will be examined and the implications of applying the model to a source discharge of a finite time interval will be evaluated.

Model Development Assumptions. The values chosen to describe the physical processes will be evaluated. These values include the lateral and vertical diffusion coefficients. In addition the model formulation assumptions include the spatial and temporal scales over which the model predictions are used.

Model Execution Input Variables. The previous model input variables, not discussed in the model assumptions section above, include ambient current speed, initial dilution, settling velocity, and initial plume dimensions. An evaluation of the methodology and assumptions used to select the values used for these variables will be done. Changes in the values due to changes in vessel and operational procedures will be addressed. This evaluation will be extended by the sensitivity study descried below.

Model Sensitivity. The sensitivity of the model to each of input variables and to assumptions about the parameters used to describe the physical processes will be evaluated. This will be done by running the model for a range of values.

Development of Independent Model

An independent model will be developed and used to evaluate the dispersion of waste discharged from the barge. The purpose of this model is to provide a more sophisticated alternative to more realistically describe the fate and transport of the discharge. The model will, at a minimum, include the effects of diffusion in both horizontal directions

(longitudinal and lateral) and will model a discharge of finite time. In addition the model will account for the spatial pattern of the discharge.

The model will use initial dilutions as determined from the size of the propeller slipstream. Vertical diffusion will be accounted for using a technique similar to that used in the FEIS model. It is anticipated that the major difference in the model predictions will be reflected in the degree of conservatism involved in the model formulations and development. Any differences in model inputs and predictions will be justified and explained.

QUALITY CONTROL AND QUALITY ASSURANCE

The objective of the quality control and quality assurance (QA/QC) effort is to provide a high level of confidence that the models are providing physically realistic predictions. QA/QC will be achieved through use of the proven models executed by staff familiar with those models. Specific QA/QC measures include: validation of model code and that the models are providing physically realistic predictions, addressing a range of potential conditions where appropriate, sensitivity analyses, and documentation and maintenance of input and output files generated during modeling activities.
The models employed in the study are mathematical representations of physical processes. The mathematical equations used are solved numerically (approximate solutions) using a digital computer. It is important that this process, which is considerably removed from the actual physical processes and behavior of the ocean, accurately simulate what happens in the ocean. The process of validation uses representative parameters for simplified system configurations to determine if the predictions reflect reality. The process of validation begins as the initial model computer code is written and continues as long as the model code is used. It is particularly important that any changes in model code be checked for validity. The final element of validation is a determination of how sensitive a model is to changes in input parameters. An extremely sensitive model probably does not provide results with a high confidence level. Sensitivity checks will be carried out for each of the models for potentially critical parameters.

Most numerical models of the type used here contain coefficients (e.g. friction factors, diffusion coefficients) that are often study site specific. Although there are generally accepted values for these coefficients, the range observed in nature is high and the models can be somewhat sensitive to the values selected. The process of calibration and verification uses measured values of forcing functions and responses to determine the

appropriate coefficients for the model configuration at the study site. Typically a set of field data is used to determine the correct values to use for the coefficients. However, this is beyond the scope of the present study and there is little or no available and appropriate data for this task. In this case the model sensitivity studies, the use and justification of reasonable values for the literature and similar studies, and the incorporation of a prudent level of conservatism is required.

DATA ANALYSIS AND REPORTING

A report documenting the results of all analyses will be prepared. The report will include summaries of all input data, modeling procedures, and model results. All pertinent model results and output files (as appropriate) will be reproduced as an appendix to the report. Model results will be presented both in tabular form and graphically (i.e. contour plots) as appropriate. The report will include: an executive summary; an introduction describing the background, rationale, and general approach of the study; a description of the methods used including model formulation and input data; a description of the model results; an evaluation of the model validity for predicting dilution and plume characteristics; and, an evaluation of the concentration of the fish processing wastes within and at the boundary of the permitted ocean dumping site.

REFERENCES

Brooks, N.H., 1960. "Diffusion of Sewage Effluent in an Ocean Current," Proceedings of the First Conference on Waste Disposal in Marine Environment, Pergamon Press, NY.

SOS Environmental and Environmental & Ocean Technology, 1990. "Mathematical/Computer Modeling of Fish Waste Disposal at an Ocean Disposal Site off Tutuila Island, American Samoa". Report prepared for StarKist Seafood and Van Camp Seafood

Soule, D.F. and M. Oguri, 1983. "A report on Ocean Disposal of Fish Processing Wastes off Pago Pago , American Samoa. Report to EPA and NOAA for StarKist Foods and Van Camp Seafood. Los Angeles, California

U.S. Environmental Protection Agency, 1989. Final Environmental Impact Statement for the Designation of an Ocean Disposal Site off Tutuila Island, American Samoa for Fish Processing Waste. EPA Region 9, San Francisco, CA.

Yearsley, J.R., 1989. "Diffusion in Near-shore and Riverine Environments," EPA 910/9-87-168. EPA Region 10, Seattle, Washington.

APPENDIX 1
SPECIAL CONDITION 3.3.5

3.3.5. Eighteen months from the effective date of this special permit, the permittee shall submit a report to EPA and ASEPA on the results of suspended phase bioassay tests and reevaluation of the model used to predict the concentrations of fish processing wastes disposed at the designated site. The suspended phase bioassays shall be conducted using at least one species from each of the following three groups: Group 1 = *Mytilus* sp. (mussel), *Crassostrea* sp. (oyster), *Acartia tonsa* (copepod), or *Trypneustes* sp. (sea urchin) larvae; Group 2 = *Holmesimysis costata* (mysid shrimp) or *Penaeus vannamei* (white shrimp); and Group 3 = *Citharicthys stigmaeus* (speckled sanddab) or *Coryphaena hippurus* (dolphinfish) juveniles.

Appropriate suspended phase bioassay protocols, either protocols approved by EPA or protocols published by the American Society for Testing and Materials (ASTM), shall be followed. Suspended particulate phase bioassays shall be run using the following fish processing waste concentrations: 100%, 75%, 50%, 25%, 10%, 5%, and a control (0%). A minimum of five replicates are required per dilution concentration. Concurrent reference toxicant tests shall be conducted when the suspended phase bioassays are run.

A sampling and testing plan shall be submitted to EPA Region IX and ASEPA by October 1, 1993 for approval before the bioassay tests are conducted. Samples for the suspended particulate phase bioassays shall be composited from the permittee's onshore storage tanks. Three samples shall be taken from the onshore storage tank transfer line at 10 minute intervals. These samples shall be composited to produce one sample for analysis. The permittee's samples shall not be combined with fish processing waste from any other permittee. The permittee shall take samples on the following dates: November 30, 1993, February 28, 1994 and May 31, 1994. Samples shall be collected and shipped to the testing laboratory according to EPA-approved methods to

ensure that the samples do not change before the bioassay tests begin. All suspended particulate phase bioassays shall be started within 10 days of sampling.

The testing plan submitted by October 1, 1993 should also include a proposal to reevaluate the disposal site model using results obtained from the new series of suspended phase bioassays. These bioassays are being required to confirm the toxicity of the fish processing wastes and to reevaluate the disposal operations based on the use of a different disposal vessel.

The bioassay and computer model confirmation report shall contain the following information:

3.3.5.1. INTRODUCTION AND PROJECT DESCRIPTION

The project description should include the following information about fish processing waste toxicity, previous bioassay test results, previous modelling at the ocean disposal site, and the design of the new bioassay tests.

3.3.5.2. MATERIALS AND METHODS

Fish processing waste sampling and sample handling procedures should be described or referenced.

References for laboratory protocols for suspended phase bioassay tests.

1) EPA-approved methods and references.

2) Test species used in each test, the supplier or collection site for each test species, and QA/QC procedures for maintaining the test species.

3) Source of seawater used in reference, control and bioassay tests.

4) Data and statistical analysis procedures.

5) Limiting Permissible Concentration (LPC) calculations.

6) Description of model selected to evaluate dispersal of fish processing wastes at the ocean disposal site. Use of this model shall be approved by EPA Region IX and ASEPA before it is used by the permittee to evaluate the fish processing waste disposal plume.

3.3.5.3. DESCRIPTION OF SAMPLING PROCEDURES

QA/QC procedures and actual sampling procedures used during fish processing waste stream sampling and handling of the samples.

3.3.5.4. FINAL RESULTS, ANALYSIS OF DATA AND DISCUSSION

1) Complete bioassay data tables and summary bioassay tables shall be furnished in the report. All data tables should be typed or produced as a computer printout.

2) The permittee shall analyze the bioassay data and calculate the LPC of the material as defined at 40 C.F.R. § 227.27(a-b).

3) The permittee shall use the LPC in the approved plume model to determine the concentration of fish processing wastes disposed at the designated ocean disposal site which complies with EPA's Ocean Dumping Criteria defined at 40 C.F.R. Parts 227 and 228.

3.3.5.5. REFERENCES

This list should include all references used in the field sampling program, laboratory protocols, LPC calculations, modelling analyses, and historical data used to evaluate the fish processing waste disposal operations at the designated ocean disposal site.

3.3.5.6. DETAILED QA/QC PLANS AND INFORMATION

The following topics should be addressed in the QA Plan:

1) QA objectives.

2) Organization, responsibilities and personnel qualifications, internal quality control checks.

3) Sampling and analytical procedures.

4) Equipment calibration and maintenance.

5) Sample custody and tracking.

6) documentation, data reduction, and reporting.

7) Data validation.

8) Performance and systems audits.

9) Corrective action.

10) Reports.

APPENDIX 2
PRELIMINARY IDOD OBSERVATIONS

(THIS SECTION TO BE ADDED AND FAXED TO YOU 11/15/93

APPENDIX 3
LABORATORY QUALIFICATIONS AND QA/QC PROCEDURES

INTRODUCTION

Advanced Biological Testing Inc. (ABT) is a scientific consulting firm providing environmental and aquatic toxicological services to public and private clients. Established in 1993, ABT has a professional and technical staff of the highest caliber. The organizational, professional and performance history of our personnel attests to our commitment to focusing on the clients' particular requirements or problems.

ABT is a California corporation with laboratory and offices in Tiburon, California. It is a small, woman-owned business. ABT scientists have been involved in a wide variety of long-term projects, including the development of effluent characterization programs and the design and implementation of these programs. They have also participated in test protocol development programs for marine and freshwater toxicity testing. ABT personnel have conducted marine environment mitigation assessment studies; bay, harbor and marina activity impact analyses; and a wide variety of aquatic toxicological studies. Specific projects have assessed the effects of dredged material toxicity and disposal; assessment of toxicity from ocean and bay wastewater outfalls; drilling fluid toxicity testing and dispersant bioassays for the offshore oil and gas industry, and toxicity identification evaluations.

Our personnel have extensive experience in sampling in the marine environment; taxonomic analysis of marine communities; sediment characterization and toxicity assessment; and laboratory and field aquatic toxicity testing.

ABT provides a full-service aquatic toxicology laboratory with marine and freshwater test systems that can be modified on short notice for specialized and large-scale tests. The testing laboratory is fully equipped to conduct the entire range of freshwater and marine toxicity tests, including flow-through, static and static-renewal studies. Our personnel are knowledgeable in organizing, interpreting, and presenting large data sets as well as having thorough knowledge of data quality assurance, and analytical interpretation. Reports developed out of these efficient data analyses are of the highest professional quality and are delivered to the client in a timely manner.

ORGANIZATION AND QUALIFICATIONS

ORGANIZATION

Advanced Biological Testing Inc. (ABT) is a woman-owned business under the general management of Ms. Sandi Kline. The Technical Director and President is Dr. Kurt Kline, and the Project Manager is Mr. Mark Fisler. It is currently registering as a woman-owned business with the State of California.

QUALIFICATIONS

Ms. Sandra Kline: Ms. Kline is Executive Officer and General Manager of ABT. She has over twelve years experience in business including scientific consulting and commercial insurance. She manages the day to day operations of ABT including the management of subcontractors, in-house accounting, and contract management. In consultation with Dr. Kline and Mr. Fisler, she prepares bids as well as qualifications statements. She supervises the production of all technical reports for the company. She is a member of the Society of Quality Assurance and also acts as the QA supervisor for the testing carried out at the laboratory. She has taken and passed the EPA Society of Quality Assurance course.

Dr. Kurt F. Kline: Dr. Kline is President of ABT He received his doctoral degree from the University of California at Davis in Ecology in 1978, with a specialization in aquatic ecology, bio-statistics and fisheries biology. Dr. Kline has over twenty years of experience in the environmental consulting field, with the last ten years in aquatic toxicology and laboratory management. He has experience in all phases of aquatic bioassay testing, with specific expertise in sediment toxicity studies, including dredge material analyses. He is an active member of the American Society of Testing and Materials (ASTM) Committee E-47 as well as the Society of Environmental Testing and Analytical Chemistry (SETAC). He presents scientific papers at meetings and symposia annually.

Mr. Mark W. Fisler: Mr. Fisler is the Vice-President of ABT and serves as the Project Manager for the laboratory. He has been conducting marine biological research for eight years. He received his B.S. degree in Biology from George Mason University in 1984. As a Project Manager, Mr. Fisler has performed a variety of aquatic studies including numerous dredge bioassays. Mr. Fisler is responsible for field collection of sediments and water samples, and is experienced with a variety of collection apparatus.

QUALITY ASSURANCE PROGRAM

Quality assurance in all phases of the testing programs is an important function at ABT. Our goal is to generate irrefutable results for all of our clients, and the QA/QC program in place at our laboratory provides the documentation necessary to assure our clients that the data presented to them is of the highest quality. The QA/QC program extends from sample receipt to testing to statistical analysis of the data to the ultimate presentation of the final report.

- **Staff Responsibilities for Quality Assurance**
- **Sample Custody**
- **Quality Assurance Objectives**

STAFF RESPONSIBILITIES FOR QUALITY ASSURANCE

The responsibility for specific project management is established to maintain project timelines, efficient and cost effective testing, and report preparation. It defines the lines of authority and provides the client with the individual(s) responsible for their testing program. The following information provides the client with the duties and responsibilities for each key individual.

Technical Director

The Technical Director will represent management and will:

- Be the initial point of contact for the client.
- Assure that all necessary resources are available.
- Assure that the Quality Assurance Unit is fully informed and involved in the project.
- Assure that all personnel are informed of project QA policy.
- Review all communication from the QA regarding the project.
- Assure that any problems, deviations, etc., reported by QA receive immediate corrective action.
- Review and approve any QA plan.
- Be responsible for the preparation of the final report.

QA Unit

The QA Unit (QA) will be responsible to the Technical Director and will:

- Supervise audits and submit a summary audit report to the Project Manager.
- Assist in the preparation of any required project QA plan.
- Communicate closely with the Project Manager.
- Inform Project Manager and Technical Director of any problems and corrective action.
- Review data files, records, forms or any other hard copy information.
- Determine that analyses and procedures were done according to protocols.
- Document any deviations from standard procedures.

Project Manager

The Project Manager will be responsible for performing the toxicity tests and will:

- Be responsible for training of staff where required.
- Be responsible for sample custody and initial water quality analysis.
- Take corrective action for any problems observed and documented by QA.
- Maintain control of data files, notes, records and other hard copy information.
- Be responsible for sample and data traceability.

- Enforce protocol requirements.
- Help prepare the project QA plan.
- Ensure that QA receives sufficient documentation to determine that the project QA requirements have been satisfied.
- Analyze data collected for QA (external analyses, etc.) for inclusion in final report.

SAMPLE CUSTODY

All samples are maintained under chain-of-custody, which documents the acquisition, storage and testing of any sample received by the laboratory. This procedure provides the client with the highest level of security during the sampling, transportation and testing of their materials.

Sample chain-of-custody (C-O-C) sheets will be prepared by the individuals collecting the samples for those samples shipped from field test sites to ABT for testing. In the event that a chain-of-custody form is not provided to the laboratory, one will be initiated at the time the sample is delivered to the laboratory by the sample custodian. These C-O-C sheets will include the sample ID number, date and time of sampling, volume of sample, preservatives added (if any) and the analyses or tests to be performed. A brief description of each sample will also be included. The sheets will also include the identity of the person packaging the samples, the transportation method used and date of shipment. The original sheet will accompany the samples being shipped.

QUALITY ASSURANCE OBJECTIVES

Quality assurance procedures to be used for sediment testing are consistent with methods described in the U.S.EPA/ACOE (1991) and U.S.EPA (1985 a, b). The methods employed in every phase of this sediment testing program are detailed in standard protocols and procedures maintained in the bioassay laboratory.

The quality assurance objectives for toxicity testing conducted by ABT involve all aspects of the testing process including: (1) water and sediment sampling and handling; (2) source and condition of test organisms; (3) condition of equipment; (4) maintenance of appropriate testing conditions; (5) instrument calibration; (6) use of reference toxicants; (7) record keeping; and (8) data evaluation.

Water and sediment sampling and holding: Sediment samples will be maintained at 4°C in the dark until they are used in the testing system. All sediments will be held in sealed storage bags. Water and Effluent samples will be maintained for no more than 36 hours as specified by EPA procedures.

Source and condition of test organism: All test organisms will be purchased from reputable suppliers who have provided ABT with organisms in the past. Normally, all test organisms are maintained in the laboratory for acclimation (exception are bivalves and echinoderms). If mortality in excess of 5% is noted in the holding stock, the animals will be discarded and a new batch ordered.

Maintenance of test conditions: Each test has a set of specified test conditions as defined in the standard testing guide or protocol. The specific required parameter limits are generally noted in the section on the acceptability of the test. If these criteria are not met, the test will be rerun if appropriate.

Calibration procedures and frequency: Instruments are calibrated daily according to Laboratory Standard Operating Procedures (SOPs) and calibration data are logged and initialed. Calibration logs are monitored weekly to ensure that they are complete.

Reference toxicant testing: A reference toxicant will be run routinely during the test period to establish the validity of the toxicity data. Reference toxicant data for species used in the performance of aquatic bioassay are available at the laboratory, and the LC50 should fall within

two standard deviations of the current laboratory mean. Water quality measurements will be monitored to ensure they fall within the prescribed limits for each test procedure, and corrective actions will be taken if appropriate.

Test deviations: All deviations from the standard testing guide or procedure will be reported with the final report. If any aspect of a test parameter deviates from protocol, the test will be evaluated to determine whether its validity has been compromised according to the regulatory agency to which it will be submitted. If the study has been compromised, the client will be notified and the test rerun.

Internal quality control checks: The quality control unit conducts periodic audits to ensure that test conditions, data collection and test procedures are according to protocol. Animal receipt and maintenance log books are used to record the source and health of organisms. Reference toxicant tests act as an internal check on organisms health and performance during the test.

Sample storage and tracking: Sample chain-of-custody (C-O-C) sheets will be prepared for each of the samples shipped from the field to ABT for aquatic toxicity tests. These C-O-C sheets will include the sample ID number, date and time of sampling, volume of sample, preservatives added (if any) and the analyses or tests to be performed. A brief description of each sample will also be included. The C-O-C sheets will also include the identity of the person packaging the samples, the transportation method used and date of shipment. The original sheet will accompany the samples being shipped.

Upon receipt of any sample, laboratory personnel will enter the time and date of arrival, the identity of the carrier as well as the person receiving the samples, and the condition of the samples on the C-O-C sheet. All persons involved with sampling, transporting or receiving the sample will sign and date the C-O-C. A copy of the sheet will be returned to the client. The original C-O-C form will be kept for the study files. The samples will then enter into the laboratory sample control system to ensure proper storage ($4 \pm 2°C$) and holding time.

Under normal circumstances all aqueous samples will be immediately analyzed for dissolved oxygen, pH, conductivity or salinity, temperature, total residual chlorine and ammonia. These data are entered into the data package. If the results of this analysis lead the laboratory to suspect testing problems, the client will be called immediately and the potential problems discussed. No testing will be carried out without this verified communication process.

Data analysis, validation and reporting: All bioassay tests are performed according to protocols and standard test conditions. The quality control unit checks all the raw data and records of the study to ensure that the required test conditions are within specifications. Any unforeseen circumstances that may affect the integrity of the study are reported with the test results. The data analysis and final report are reviewed for accuracy by QA.

Procedures used to assess data precision and accuracy: The precision of the LC50 determination from the reference toxicant will be shown by calculating the 95 percent confidence intervals and standard deviations over time. Acceptable accuracy will be a mean reference toxicant value that is within two standard deviations of the current laboratory mean. A value greater than two standard deviations but less than three could be acceptable if the results of the sediment testing indicate that no significant sensitivity (or lack of sensitivity) was apparent in the testing.

Rec'd 11/30

AMERICAN SAMOA GOVERNMENT
PAGO PAGO, AMERICAN SAMOA 96799
OFFICE OF THE GOVERNOR
ENVIRONMENTAL PROTECTION AGENCY

In reply refer to:

Serial:308

November 18, 1993

To: Pat Young, USEPA, OPINAP

From; Sheila Weigman
American Samoa Environmental
Protection Agency

Re: Draft Study Plan for Special Condition 3.3.5
Ocean Dumping Studies for Star Kist and Samoa Packing,
American Samoa

I have reviewed the above-referenced draft plans and find them to be complete and to meet the Ocean Dumping permit requirement. I believe the request for use of an alternative species for the Group 1 bioassay to be appropriate. Please feel free to contact me with any questions.

cc: Steve Costa, CH2M Hill

U.S. Delegate Rpts Waste Disposal Permit Activity
FW plus 166
Go back to 1990
1/4ly rpts to EPA
May be pulled together
Use what's on file only.

Pat Young -
Pat Zeller - replaced by Alan Ota
Mike summarized SOPs
Monthly sampling

DISPOSAL OF
ADULTERATED FISH WASTE

Samoa

London Dumping Convention
Permit Summary on
Ocean Disposal of Adulterated Fish Waste

	Permit Type	Research Ocean Dumping Permit
	Permit Number	1988 — OD 88-01 1989 — OD 88-02 1990 — OD 90-01 (Starkist Samoa, Inc.) OD 90-02 (Samoa Packing, Inc.)
	Permittee	Starkist Samoa, Inc. P.O. Box 368 Pago Pago, American Samoa 96799 Samoa Packing, Inc. P.O. Box 957 Pago Pago, American Samoa 96799
	Issuing Authority	Environmental Protection Agency Region IX 75 Hawthorne Street San Francisco, California 94105OD 88-01
0.2	**Permit Start Date**	1988 — March 4, 1988 1989 — September 6, 1988 1990 — July 31, 1990
	Permit Expiry Date	1988 — September 4, 1988 1989 — February 6, 1989 (The permit was administratively extended until a special permit could be issued because the Ocean Dumping Ban Act prohibited all new research permits.) 1990 — July 30, 1993
0.3	**Country of Origin of Wastes**	American Samoa
	Port of Loading	Pago Pago Harbor

0.4 **Waste Specification**

Dissolved air-floatation (DAF) sludge. DAF is derived from waste streams at fish processing plants. Alum and a coagulant polymer are added to the waste stream to control odor and reduce liquid volume, respectively. Table 1 shows the maximum concentrations for specific parameters of the waste.

0.5 **Waste Form during Disposal**

Sludge waste. There are no data on the percent of insoluble compounds.

0.6 **Total Quantity of Waste**

1988 — 36,813 mt (9,634,292 gal)
1989 — 37,277 mt (10,552,925 gal)
1990 — 30,086 mt (8,357,130 gal) (No data are available yet for precooker water and presswater disposed after July 1990.)

0.7 **Expected Frequency of Dumping**

Daily; most disposals take place Monday through Friday

0.8 **Chemical Composition of Waste**

Average composition (1987-1989)

Parameter	Starkist Samoa	Samoa Packing
Total solids	142,899 mg/L	196,136 mg/L
Total suspended solids	101,218 mg/L	135,266 mg/L
5-day biological oxygen demand	212,041 mg/L	119,532 mg/L
Total phosphorus	1235 mg/L	1414 mg/L
Total nitrogen	6645 mg/L	5270 mg/L
Oil and grease	49,426 mg/L	85,176 mg/L
pH	5.9	6.2
Total volatile solids	198,863 mg/L	148,967 mg/L
Density	0.99 g/mL	0.95 g/mL
Ammonia	1994 mg/L	1345 mg/L

0.9 **Physical Properties of Waste**

Sludge, density is 0.9 - 1.1 g/mL; pH is 5.5 - 7.0; solubility is unknown.

0.10 **Method of Waste Packaging**

The DAF sludge is pumped into a large tanker ship and transported to the disposal site.

Table 1. Maximum Concentrations of Parameters in DAF Sludge Waste

Year	Parameter	Starkist Samoa			Samoa Packing		
		DAF Sludge (mg/L)	Precooker[a] Water (mg/L)	Presswater[a] (mg/L)	DAF Sludge (mg/L)	Precooker[a] Presswater[a] Water (mg/L)	(mg/L)
1988, 1989							
	Total suspended solids	219,000			219,000		
	5-day biological oxygen demand	337,500			337,500		
	Total phosphorus	3390			3390		
	Total nitrogen	15,000			15,000		
	Oil and grease	151,000			151,000		
1990							
	Total solids	230,460	158,290	271,920 463,780	492,000		257,290
	5-day biological oxygen demand	376,520	365,450 524,270	399,090	443,840		60,220
	Total phosphorus	3050	1150	1990	3910	2170	6860
	Total nitrogen	18,100	21,380	31,550	14,950	20,820	32,020
	Oil and grease	129,590	4830 386,480	62,150	282,750	207,830	
	Total volatile solids	182,210	146,900 384,560	385,630	308,700		358,180
	Density[b]	0.92-1.07	0.97-1.06	0.96-1.07	0.85-1.08	0.96-1.04	0.98-1.07
	Ammonia	7500	21,200	21,170	2570	2740	4940

[a] Data not available for 1988 and 1989
[b] Density units are g/mL

0.11 **Method of Release**

1988-1990

The DAF sludge is released from a discharge valve in the hull of the disposal vessel into the propwash of the ship to achieve adequate initial mixing and comply with the limiting permissible concentration (LPC) of the waste. The LPC is based on the toxicity of the waste stream.

1988-1989

The vessel traveled in a circle with a 0.2-nmi radius until all of the DAF sludge was discharged.

1990

The vessel traveled in a crossing track at the upcurrent quadrant of the disposal site until all of the DAF sludge was discharged. Disposal outside the boundary is not permitted.

0.12 **Procedure and Site for Subsequent Tank Washing**

No tank-washing procedures are permitted.

0.13 **Approved Dumping Site**

Year	Geographical Position	Depth of Water	Distance from Nearest Coast
1988	14° 22.18′ S 170° 40.87′ W	900 fathom	3.25 nmi
1989	14° 22.18′ S 170° 40.87′ W	900 fathom	3.25 nmi
1990	14° 24.00′ S 170° 38.30′ W	1500 fathom	5.0 nmi

0.14 **Monitoring Requirements**

Obtain water samples from the plume up to 4 h after disposal. Analysis of waste stream for constituents listed in permit.

0.15 **LDC Annex III Information**

96-h Suspended-Particulate Phase Bioassays

Fundulus parvipinnis LC_{50}: 0.53% (average of 1987 mixed samples)
Acanthomysis sculpta LC_{50}: 0.20% (average of 1987 mixed samples)
Eurydice caudata LC_{50}: 1.44% (average of 1987 mixed samples)
(The average is determined from 5 replicates of one sample)

Biodegradability is unknown